ANNUAL REPORT

OF THE

Director-General of Archæology in India

1920-21

BY

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CALCUTTA
SUPERINTENDENT GOVERNMENT PRINTING, INDIA
1923

Price Rupees Two.

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Annual Report of the Director-General of Archæology in India, 1920-21.

THE inauguration of the Montagu-Chelmsford Reforms has rendered the year 1920-21 no less memorable for the Archæological than for other Departments of Government and has brought with it far-reaching changes alike in our organisation and in our procedure. Hitherto, the constitution of the Department has been an anomalous one. Nominally, archæology was an Imperial subject, but both expenditure and control were divided between the Central and Local Governments. For most of the personnel the Government of India found the money, but in Madras and Burma the staffs were paid for by the Local Governments. On the other hand, the conservation of monuments was financed from local funds, but substantial grants-in-aid for it were made from Imperial Revenues. Moreover, although most of our officers were Imperial, they were directly controlled by the Local Administrations. All this has now been changed. Henceforth, the entire cost of the Department and of all its activities is to be borne by the Central Government, and, though the Local Governments are still to remain in executive control of our provincial staffs, they will do so as the Agents of the Imperial Government. Thus, the Department will be Imperial in the real meaning of that term. Nor is this the only radical change. In the past, the duties of our archæological officers have been all too vaguley defined, and they have been saddled with responsibility for each and every ancient monument in their circles. From now onwards, they are to confine their attention to those monuments only which have been declared "protected" and which have been accepted as a Central charge by the Government of India. These monuments number some 2,500 in all, and the eight Superintendents among whom they are divided will have, even now, more than enough to do, but they will at least know the full extent of their responsibilities and be able to shape their programmes more effectively. That all this puts many new and arduous duties upon the head of the Department, will be obvious; but it can hardly be doubted that the result will be greatly increased efficiency in all branches of our work.

Owing to the absence on leave of Mr. Blakiston, the present permanent Superintendent, Mr. J. A. Page officiated as Superintendent of Muhammadan and British Monuments, Northern Circle, from October 1920 to the end of the financial year, and was thus in direct charge of the work during the busiest time of the year. In the United Provinces the more important of the special works were

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central at and around Agra, the most costly being at the Taj Mahal. Here, the great rectangular courtyard in front of the main gateway to the Taj enclosure, had lost much in dignity and beauty owing to the destruction of the cloisters or *dalans* which originally bounded the enclosure on its four sides. The restoration of these cloisters had been started many years ago and section by section they had been completed on all except the southern side. This year the two remaining sections have been taken in hand, and within another twelve months it is hoped that the whole will have been finished (Plate I, *a* and *b*). Another major work now being carried out under the supervision of the Agra office is the restoration of the eastern one of the four great causeways at Akbar's tomb at Sikandarah. In its ground plan this monument adheres rigidly to the strict geometrical canons of the period. The lofty terraced monument which constitutes the tomb proper stands in the centre of a walled and spacious garden, in the centre of each of whose four sides rises a stately and richly decorated gate. Although three of these gates are false, each of them was originally connected with the tomb by a long straight causeway of red sandstone with a water channel down its centre, which rising some six feet or more above the level of the garden, constituted a conspicuous and essential part of the whole design. The main entrance to the enclosure is on the south, and the causeway on this side was naturally the first one to be restored; then followed about twenty years ago, the repair of the western one, and some twelve years later the eastern causeway was taken in hand. But on the outbreak of the war the work necessarily had to be postponed, and it was only during the past season that it could be resumed and pushed on towards completion (Plate II, *a*). At the same time also good headway was made in the resetting and renewal of the loose or missing face stones of the broad and lofty platform in front of the main gateway. These measures have already resulted in a very marked improvement, and it is clear that when the present programme is complete, the surroundings of this, the last resting place of India's most famous Muhammadan Emperor, will have regained a large measure of their former beauty. It is a pity that the northern causeway cannot be similarly restored; but here the damage has been more extensive than on the east, and, even if restoration were desirable, its cost would be wholly prohibitive under present conditions. Other conservation works at Agra include the substitution of rolled steel joists for the badly rotted rafters in the ceilings of the aisle skirting the famous "Jasmine Tower," as the Musammam Burj is wrongly called; minor repairs to the *baradaris* in the Ram Bagh, which Babar is supposed to have laid out originally and where his body reposed for a time prior to its removal to Kabul, and repairs to the fallen portions of the embankment wall at the Chini-ka-Rauza, the sole surviving example in Agra of a tile-enamelled tomb. At Fatehpur-Sikri also useful work has been done, under the personal control of the Superintendent, in the direction of clearing away accumulated débris and jungle-growth. Various other repairs have been effected in the general neighbourhood, but are of too petty a nature to require detailed mention here. At Chunar in the Mirzapur District work was continued at the

tomb of Iftikhar Khan, Nazim of Chunar under Jehangir, where amongst other items the roof of the entrance gateway was dismantled and reconstructed. At the Residency in Lucknow a new flagstaff and a new flag were provided, and the British tombs in the old military cemetery at Beonga Khasra, Meerut District, were repaired, as were also the tombs in the Roman Catholic cemetery at Sardhana.

In the Punjab the chief conservation works were in connection with the historical monuments at Lahore, and here the tomb of Asaf Khan, Jahangir's Prime Minister, came in for the greater share. A sum of Rs. 14,670 was expended on this tomb and its compound walls, the principal works being the restoration of the old *lakhauri* brick work of the causeways, and repairs to the *chabutra* on which the tomb stands. At the adjoining Akbari Sarai the *dalans* surrounding the court were repaired, and the stone facing of the mosque was reset in places where it had become displaced. At Jehangir's tomb which stands in the neighbouring enclosure, the decay of the honey-combed plaster work necessitated the repair of the domed ceiling of the crypt. The Chauburji gateway also received attention, the short roadway being given a dressing of *kankar*, and new floors made of brick-on-edge being provided in the side chambers. In the Lahore Fort, a dilapidated portion of the Shish Mahal ceiling, with its mirror-incrustation, was repaired, and work was begun on the pathway between the entrance gate of the Gulabi Bagh on the Shalimar Road and Dai Angah's tomb across land, which once was a garden but which is now given over to cultivation. At Attock, work on the Begum-ki Sarai was continued, undermined parts of the old walls being underpinned and unsightly remains of modern buildings within the area being cleared away. At Hasan Abdal also conservation was continued from the previous year. The Hakim's tomb and its *chabutra* were underpinned and the monolithic block forming the cenotaph at Lala Rukh's tomb was removed to Agra for repair under the presonal supervision of the Archæological Superintendent. In the Gurgaon District a number of kos minars marking the old royal route of Mughal days were also conserved at a cost of Rs. 1,723. At Thanesar in the Karnal District work was commenced on the Patthar Masjid, a small red stone mosque dating supposedly from the end of the 14th century, but expenditure this year was limited to the purchase of new sandstone for the repair of the floor in the prayer chamber and for replacing a missing *jali* screen to match the existing one, in one of the windows. Punjab.

Nearly Rs. 19,000 were spent on underpinning walls and bastions along the road front of the Tughlaqabad Fort, founded in the first quarter of the 14th century by Ghiyas-ud-din Tughlaq, and in clearing away a vast amount of accumulated earth both inside and outside, which has not only effected a great improvement in the general appearance of the monument, but has also brought to light several interesting features hitherto concealed beneath the débris. The fine gate in the south-east corner of this Fort has also been conserved, the work involving a great deal of underpinning in the interior; the clearance of débris from the front of a gateway to the West of the sluice-*band* led to interesting results in that it disclosed the original setting-out of the approach steps, as they gradually ascend towards the entrance to the gateway. At the Delhi.

Ferozshah Kotla, more than half the funds available this year had to be laid out on underpinning eroded walls along the river front, the rest going chiefly towards the repair of the entrance court and of the ruined side walls in the passage leading to it. At Humayun's tomb the work of underpinning the enclosure walls, which had been begun last year, was continued, certain dilapidated pavilions on the wall were repaired, and a beginning was made with the lay-out of a sunken garden on the eastern terrace along the river front, some Rs. 15,000 in all being utilised for the purpose. In the Delhi Fort the principal work of the year was the lowering and regrassing of the lawn in front of the Mumtaz Mahal, but minor repairs were also carried out to the drainage system in the gardens as well as to the irrigation tanks. The *chhajja* over the Lahore Gate, which was in so dangerous a condition that it had to be taken down a few years ago, has now been renewed, to the appreciable advantage of the monument. Plate II, *b* gives a view of the exterior of the Lahore Gate, from the front of which the glacis is being removed and the ground levelled. Already a very great improvement to the exterior aspect of the Fort has resulted, and it is hoped that funds may become available some day for levelling the whole of the western front and thus bringing into view the whole length of wall which is now partly obscured by the glacis. In the Qutab area, work has been completed on the early Pathan mosque in the Mehrauli bazaar, a monument remarkable, Mr. Blakiston says, for its treatment of incised plaster arabesques; and a new iron railing has been provided on the Qutb Minar, to take the place of an old one that had become dangerously loose.

Among the special conservation works carried out in the Punjab by the Superintendent of Hindu and Buddhist Monuments the most important were the following:—(1) the repair of the temples and other remains in the ancient Hindu fort at Amb; and at Malot in the Salt Range; (2) the dismantling of the modern protection shed over the rock inscriptions at Kanihyara; (3) the repair of the temples at Nurpur and Baijnath and of the Kotla and Kangra forts; and (4) the demarcation with boundary pillars of the "Protected" area at Sunet in the District of Ludhiana. In my Report for last year I mentioned that an estimate for Amb amounting to Rs. 3,750 had been prepared. This year I am glad to record that the work has been taken in hand and substantial headway already made. The dangerously overhanging portion of the superstructure of the larger temple here has been supported on masonry piers and the original basement of the temple has been exposed to view. The latter is in a much shattered condition, but must have been an imposing structure originally, adorned with boldly conceived niches containing images and approached on the west side by an imposing flight of steps, which have now been disinterred from the débris. Extensive conservation remains to be done to the basement as a whole, but the cella both here and at the smaller temple was given a terraced flooring, and the cinque-foil arch of the latter was reconstructed after its original design. Plate III, *a* shows the temple at Malot before conservation, with the unsightly casing once constructed over the original plinth by the Public Works Department. This casing was removed a year or two ago, and the work since

then has consisted in repairs to the old plinth (Plate III, *b*) and in various minor works, such as underpinning the decayed walls of the gateway and clearing and levelling the site generally. All the measures called for in the original estimate have now been completed, the ground has been levelled and a rubble wall has been built about the site to keep out cattle. All that now remains to be done is to restore the steps of both the cella and the gateway. This it has hitherto been impossible to undertake, for want of data as to the nature of the steps originally in position here: but the fortunate recovery of the steps at the temple in Amb supplies us with useful information on the point, and Mr. Sahni considers that we can now go ahead with this, the one remaining item at Malot, with reasonable confidence. At the Nurpur fort the estimate included a sum of Rs. 840 for the erection of a shed for loose sculptures. As there was no sufficiently urgent need for such a shed, however, this money was applied by reappropriation to the excavation of the platform on which the temple stands, and the work carried out up to date has already brought to light the original steps behind the modern staircase on the south side. With the clearance of the débris from the remaining sides, the general appearance of the monument will be vastly improved. The only repairs carried out at Baijnath were those affecting the walls of the Dharmasala in the enclosure. The compound wall on the south side is hidden by modern houses which completely obstruct a view of the temple from that side, while the eastern portion of the gateway also on the south side of the enclosure is blocked with modern walling. This is to be cleared away, and the roof of the gate, which was partly renewed some time ago is to be reconstructed in accordance with its original design. The Dharmasala is one of the monuments badly shattered by the earthquake of 1905, and there is still much to be done before all the damage can be made good.

In the United Provinces the construction of the stone pavilion over the stump of the Asoka column at Sarnath, which was commenced in 1919-20, was pushed forward, and by the end of the year was all but completed, only a small portion of the roof remaining to be done. The work at Mahoba consisted of the clearance of débris from the south side of the Chandella temple at the village of Rahilya, supposed to have been erected by Rahilavarman (A.D. 875—900), the construction of a new enclosure wall around the Makarbai temple which was nearing completion by the end of the year, and certain petty repairs to the Kakra Marh temple, on the rocky island in the north-west corner of the Madan Sagar lake, a temple equal in size to the largest of the great Khajuraho temples, and constructed entirely of granite. The work at this site would have advanced further, had it not been that both the District Engineer and the subordinate under whom the work was started were transferred before satisfactory progress had been made, so that the conservation suffered a temporary set-back in consequence. The Makarbai temple is situated in the heart of the village of that name, some ten miles to the north-east of Mahoba. It is in an excellent state of preservation and consists of three separate cellas, one at the back of the *mandapa* and one each at the north and south sides. In the Gazetteer of the Hamirpur District, as also in General Cunningham's Archæological Survey

Reports (Vol. VII, page 26), this temple is described as a Buddhist sanctuary. More probably it is a Jain temple. This seems evident from the fact that, although none of the cult images have survived, the lintels of the entrances to the shrines bear seated figures which appear to be Jain Tirthankaras.

Of the works undertaken in the Frontier Circle, those at Takht-i-Bahi included minor repairs and underpinning in Court VI, the dismantling and rebuilding of a dangerously leaning wall in Court XIX, and the safeguarding of the magnificent revetment on the north-west corner of the site by stone pitching, while the path on the southern face of the hill was also considerably improved so as to give easier access to the ruins. Operations at this site, which have been carried out at intervals since 1907, have resulted in the clearance of the greater part of the chief monastic enclave, and the monument as now revealed is most impressive, particularly when viewed from the high ground to the east and west. Nevertheless the area that has been cleared to date is only a fraction of the whole site, if the smaller structures on the parallel ridges to either side be included. These promise to be no less interesting than the main monastery, and it is clear that an extension of the exploration to these areas will be abundantly repaid when funds are available. At Jamalgarhi conservation and exploration have proceeded hand in hand. The east and south revetment walls of the Conference Hall were cleared of débris and then restored, where necessary, to a height of 2′ 9″ above floor level, in order to control the drainage of the upper court and to ensure the safety of visitors (Cf. Plate IV, *a* and *b*). The main stupa at Jamalgarhi stands in a courtyard on a higher level than the rest of the enclave, access to it in old days having been provided by a long staircase, the risers of which were originally adorned with sculptured friezes representing Jataka scenes, some of which are now conspicuous in the Gandhara collection at the British Museum. To what a ruinous condition this once magnificent staircase has been reduced can be realised from figure *a* of Plate V. To restore it to its pristine splendour is of course impossible, even if such restoration were desirable. The steps are, however, still needed as an approach to the Main Stupa, and a limited amount of restoration has therefore been unavoidable. Figure *b* of Plate V illustrates the transformation in which this work has resulted, the staircase having now regained something of its old dignity, if not of its original iconographic interest and beauty. At Jaulian, the principal work this year has been the preservation of the numerous figures and architectural details in stucco which adorn the many small stupas and shrines discovered by me at this site. The approach to the monument has also been improved by metalling the road leading from the Taxila-Khanpur road to the base of the Jaulian hill. The two Kafir Kots in the Dera Ismail Khan District were visited by Mr. Hargreaves, and notes were drawn up for their conservation. Plans of both these sites have been prepared, one of Kafir Kot by Sir Aurel Stein, 1912 (which is reproduced this year in the Annual Report of the Frontier Circle), and the other, to be published with next year's Report, under Mr. Hargreaves' supervision. Photographs of additional details have been obtained this season, one of which is an interesting false doorway in one of the temples, where each panel

is ornamented with a single full-blown lotus flower. It is worthy of very special note that this doorway stands above a radiating arch whose voussoirs are set in good white lime mortar, two features of extraordinary rarity in pre-Muhammadan monuments. The dearth of engineers and the pre-occupation of the Military Works Department due to the unsettled state of the Frontier have combined to delay the inception of the work at Bilot, but it is hoped that funds can be found and the work be actively taken in hand during 1921-22.

Eastern Circle.

So long as the Eastern Circle of the Archæological Department embraced four Provinces, it was inevitable that the work in Bengal and Assam should be more or less overshadowed by the more important and more pressing needs of the Holy Land of Buddhism in the Bihar area. It is of good augury, therefore, for the two eastern Provinces that this arrangement has at last come to an end, and that the old Eastern Circle has now been so subdivided as to give a whole-time Superintendent to Bengal and Assam, which are alone to constitute the Eastern Circle henceforth, while Bihar and Orissa with the Central Provinces and Berar are to be known as the Central Circle and to be served by a Superintendent and Assistant Superintendent who will remain at Patna as heretofore. This change, which was foreshadowed in my last year's Report, was carried out with effect from the 1st April, 1920, although the Officiating Superintendent for the new Eastern Circle, Mr. K. N. Dikshit, M.A., was not able actually to take over his duties at Calcutta until the 12th June. What an improvement the appointment of this new officer is leading to, can be seen from the first Annual Report of the new Circle, although it will necessarily take some time for the accelerated programme to be actively prosecuted. Of the works carried out in Bengal the special repairs to the Palpara temple at Chakdaha in the Nadia District are the most extensive. The Palpara temple, as can be seen from the photographs reproduced in Plate VI, is typical of the style prevalent in Lower Bengal, where, as might be expected, the houses of the gods are closely modelled on those of their worshippers and show the same simplicity of ground plan and the same curved roof. Apart from the slightly recessed angles of the building, which are banded horizontally with double and triple mouldings, and the long curvilinear mouldings parallel to the eaves which effect a graceful transition from the actual wall to its covering, the ornamentation of the shrine is wholly confined to the front façade, and even here is limited to highly conventionalised designs (Plate VI, *a* and *b*). The door frame is elaborately designed and exquisitely ornamented in moulded and sculptured brick, the refinement of the decoration and its restriction to the entrance imparting to these Bengal temples something of the peculiar charm of certain Spanish monuments, and all the more deserving of appreciation in the East, where restraint in the application of ornament is not a common phenomenon. The fact, however, that these Bengali temples are almost always constructed of brick, coupled with the luxuriance of the vegetation in a climate perennially hot and damp, makes their disintegration and decay especially rapid when once they are exposed to neglect. Plate VII, *a* gives some idea of the agency by which so many shrines in Lower Bengal have thus been ruined. The rapidity with which these giant creepers grow necessitates

Bengal.

the utmost vigilance on the part of custodians if the jungle is not to get the upper hand. At the Palpara Temple the neglect had gone so far, that very extensive jungle clearance and equally extensive underpinning were necessary; but both have now been satisfactorily effected, and a new lease of life has been given to this unpretentious but nonetheless valuable memorial of the past. At Gaur and Panduah, the most important archæological centres of the Muhammadan period in Bengal, no large estimates were in hand this year, but among the monuments which underwent minor measures of repair may be mentioned; the Dakhil Darwaza at Gaur, where the left-hand side of the south face of the gateway was underpinned and refaced; the Sat Masjid at Keraniganj near Dacca, which had been damaged by the cyclone of August 1919; the old tower on the bank of the river at Nima Sarai opposite Old Malda, where improvements were effected to the steps, to the arched opening at the top and to the roof; and the important group of temples at Vishnupur in the Bankura District.

Assam.

In Assam, conservation is still markedly in arrears, and a considerably increased outlay will be needed these next few years if we are to do our full duty by the monuments. Mr. Dikshit reports that the only interesting piece of work in hand this year was that on the Bordole temple at Bishnath in the Darrang District. This temple is one of the few remaining monument on the north bank of the Brahmaputra and was recommended for preservation by Mr. Blakiston so long ago as 1914. A supplementary estimate has now been prepared, and fairly extensive repairs to the roof and the dome (where considerable jungle-cutting was needed) as well as to the arches and to the brickwork both inside and outside, are in progress, which will be recorded more in detail in a subsequent Report after the completion of the work.

Central Circle.
Bihar and Orissa.

In Bihar and Orissa a total of Rs. 12,664-13-0 was devoted to the repair and maintenance of monuments, including a sum of Rs. 5,500 spent on strengthening and conserving the excavated remains at Nalanda. This latter work is being carried out by Pandit Hirananda Shastri *pari passu* with the exploration of the site, and consists in the main of consolidating the fabric of walls found to be in a shattered condition, in repairing door-jambs, waterproofing the hearting of fractured main walls, and the like. In the centre of the Rajgir valley an attempt has been made to preserve certain curious and as yet undecipherable inscriptions in the so-called Shell Character which occur on a rocky pathway running through the vale, by erecting low, short walls above and below the epigraphs, in order to deflect both traffic and flood-water. At Rohtasgarh, in the Shahabad District, substantial repairs have been carried out to the southernmost building at the Raj Ghat of the Fortress, where cracked stone beams have been replaced by new ones, a gap in the roof and two in the front walls have been closed, bulging walls have been dismantled and rebuilt; cracks have been grouted, stairs leading to the roof repaired, and débris collected in the interior has been removed. Minor measures have also been carried out at Konarak in continuation of the work done in previous seasons, but they consist mainly of sand-clearance and the resetting of displaced images, and call for no special comment. Near Jajpur also, in the Cuttack District of Orissa, special repairs have been taken

in hand to the old bridge of eleven arches called the Tentulimul Bridge, which appears to belong to an age ignorant of the use of the arch and to be one of the bridges erected by the early sovereigns of Orissa. The work here comprised the dismantling and rebuilding of disturbed pier and arch masonry (by which, of course, only flat corbelled arches are meant), the replacing of missing portions of the face walls, earthwork in making up hollows near the bridge, the removal of pipal trees from the vicinity and jungle growth from the actual fabric of the bridge itself, and also the provision of parapets for the greater security of traffic.

Central Provinces and Berar.

Expenditure on conservation in the Central Provinces and Berar was distributed over 61 items, 13 for special and 48 for annual repairs. Among the former was an estimate for Rs. 3,640 for repairs to the ancient Brahmanical temple at Kanorabari in the Damoh District (Plate VII, *b*), but the work was actually completed at a cost of only Rs. 2,016, thus effecting a considerable saving. Parts of the exterior facing of this temple having become loose and insecure, it was found necessary to dismantle and rebuild these portions, and a low platform has also been built around the base of the shrine, to protect it against floods from a neighbouring *nala*. At Eran, the fractured legs of the colossal Boar image of Vishnu and also the two pillars of Gupta date have been secured with brass bands, and a small sum has been spent on repairing the Vishnu temple. At Bibi Sahib's mosque in Burhanpur, the ugly brick pillars so mistakenly built some years ago against the old stone piers of the central dome were replaced by more innocuous stone pillars, and new *jali* panels were provided where necessary for the windows. The work at Nadir Shah's tomb is still continuing. Here, the coursed rubble platform is to be refaced, as well as the outer wall of the tomb itself, with plain dressed ashlar masonry, and the interior is to be repaved. The flat roof of the tomb has already been made water-tight with a layer of fine concrete, and similar attention has been paid to the exterior of the dome. The work at the Jami Masjid of Asirgarh comprised the dismantling of a modern structure erected on the roof during the time when the mosque was used as a barrack, the removal of alien window-frames from the mihrab recesses, the making good of damaged plaster, and the replacement of fallen *chajja* stones and their supporting brackets, both along the east front of the prayer chamber and in the flanking minars. In the latter case the tower on the south side was found to be in so dangerous a condition that its upper portion had to be taken down and rebuilt to the old design. In 1914 a heavy estimate for Rs. 12,851 was sanctioned for repairs to the Anandesvara temple at Lasur in the Amraoti District, this being an old temple of Mahadeo in the Hemadpanti style. The principal work here consisted in reconstructing the facing of the shrine itself, but this had previously been completed and this year there remained little to do beyond replacing the missing top course of the high stepped *chabutra*, on which the triple-shrined temple rests. At Gawilgarh Fort, also in the Amraoti District, new *chajja* slabs, with supporting brackets and lintels, have been provided for the Chhoti Masjid; the dome and the exterior of the back and end walls have been made watertight, and the platform in front of the mosque has been made good. Certain merlons on the top of the Bara Gateway (Plate VIII, *a*),

which had been inaccurately restored, were replaced by others of the correct height, and petty measures of a protective kind were also carried out at other gateways of the Fort, in addition to a general jungle clearance from all the principal structures within its area. At Lohara, in the Yeotmal District, the projected conservation of the fine Hemadpanthi temple was this year completed. The temple consists of a rather heavy *sikhara* with a porch in front, the latter possessing 18 columns. The pavement has been renewed in both the porch and the sanctum, the dwarf walls of the mandapa have been repaired where stones were missing from the coping, *chajja* stones have been secured with copper clamps, cracks have been grouted and the roof made watertight, so that now it is hoped that this interesting monument is really sound (Plate VIII, *b*).

Western Circle. Thanks to the continued liberality of the Bombay Government, who again this year granted Rs. 80,000 for conservation work in the Presidency, to which an imperial subsidy of Rs. 10,000 was added, and thanks also to the energy shown by the Superintendent of the Western Circle, the record of conservation work in that circle has been a good one. A sum of Rs. 8,647 has been wisely and usefully expended in clearing and levelling the ground around the famous Gol Gumbaz in Bijapur. The work is still incomplete and it still remains to construct a compound wall around the monument, but already a considerable improvement has been effected. At Champaner, also, extensive and much needed repairs have been carried out to the splendid fabric of the ruined Nagina Masjid. The whole of the facing both in front and at the back of this masjid, which had become separated from the masonry of the core has been reset in position, the top has been made watertight and all dangerous cracks have been made good (Plate IX). At Ahmedabad, Rs. 2,000 and more have been devoted to improving the surroundings of the beautiful tomb and mosque of Rani Sipri dating from 1514 A.D., and Rs. 3,494 have been spent at Dholka in buttressing the high wall of the Khan Masjid and in filling in cracks in the front façade, besides building a low parapet wall between the two main pylons. More than a thousand rupees have been applied to levelling and metalling the ground in front of the Caves at Bhaja, in the Poona District, and to building stone pillars to carry the roof over certain of the votive stupas; and a like amount has gone to the repair of the Jami Masjid at Khudabad, where the work consisted, in the main, of underpinning old arches, filling in open joints, providing open metal expended screens and improving the drainage. A novel piece of conservation at Bijapur, which also deserves mention, was that carried out to the magnificent old Baobab tree (Plate X, *a*) in the compound of the District and Sessions Judge. This tree was one of the execution trees formerly used by the Adilshahi Sultans for the hanging of their prisoners. Unfortunately, its trunk showed signs of serious decay and it was necessary to protect it against further weathering by applying a thick coat of tar to the effected parts and then filling the hollow of the interior (15′ 9″ × 17′) with rubble and concrete. In the conservation of ancient monuments in the Bombay Presidency several cases of faulty work have occurred during this year, which were due in some cases to lack of adequate expert supervision, in others to the neglect of the written instructions of this Department. The

faults referred to are fully dealt with in the local Report of the Archæological Superintendent, Western Circle, and I need not discuss them further here.

Central India.

In Central India a total of Rs. 7,916 (including Rs. 3,679 from Imperial sources) has been expended at Dhar and Mandu, where twenty-one different monuments are under repair. The flat roof of the Jami Masjid has been made watertight, the stones which were missing in the long vault over Hoshang Ghori's tomb have been replaced, the dilapidated window on the north side of the Hindola Mahal has been taken down and rebuilt, and extensive clearance of jungle and débris has been effected over a wide area, to the great improvement of the site as a whole. In Chhatarpur State also the Durbar have spent Rs. 1,480 on conserving their temples at Khajuraho, but the programme of work on this famous group is a very extensive one, and cannot be taken in hand very actively until next year, when efforts will be made to secure a competent overseer for the work. For the repair of the Gupta Temple at Bhumara, which was discovered only in 1919-20, the Nagod Durbar placed a sum of Rs. 500 at the disposal of the Superintendent. All that could be done this season was to cut down jungle on the site of the temple, to remove the débris with which it was encumbered and lay bare the plinth of the mandapa (Plate X, *b*). In the course of these operations some exceptionally beautiful sculptures were discovered (Plate XI), but the only cult image found, with the exception of the great Mukhalingam in the Shrine, is an image of Ganesa carved in the round, with a plain halo behind its back. In this image the God has the big ears natural to an elephant instead of the usual short ones. A large number of chaitya-window shaped panels were also found with the figure of a God in their centre medallion. The medallions were of two different sizes, the larger ones containing images of Surya, Vishnu, Mahishamarddini, Karttikeya and other gods, the smaller ones containing Cupids and other gods.

Southern Circle

In the Southern Circle a total of Rs. 38,145-10-7 was expended on conservation out of the year's grant of Rs. 40,000. Good progress continues to be made in improving the roads at the famous site of Hampi. The three mile stretch of roadway from the resthouse to the old Hampi Bazaar near the river has now been taken over by the Public Works Department, as the District Board were unable to maintain it in good order, and Rs. 2,000 has been allotted for the proposed new road to the Viṭṭhala Temple, one of the most remarkable monuments at Hampi. Some of the stone ceiling slabs and pillars of this temple, which had been found to be cracked, have now been repaired, and the large and handsome stone-tank east of the Paṭṭābhirāma temple, one of the largest and finest of its kind in this district, has been taken on the list of Protected Monuments and cleared of rank vegetation and loose stone. A small Śiva temple not far from this tank and the so-called underground temple on the road to Hampi Bazaar have also been conserved this year. Besides these specific works a good deal has been done toward clearing some of the old streets and ruined buildings of minor importance from the vegetation that had so long concealed them, so that the visitor can now get a far better idea of the vast extent of this wonderful old city.

At Anjengo, the repairs to the Fort, started two years ago, are now nearly complete, and the buildings at Udayagiri in the Nellore District, an illustrated account of which was published in Mr. Longhurst's Report for 1916-17, have been put in good order. Further improvements have also been effected to the roads at Gingee Fort and the Seven Pagodas, the special repairs to the Chandragiri palaces, started two years ago, have been finished, and the repairs to the historical buildings in the fort at Masulipatam are nearing completion. Another interesting monument in South India which has received attention is the Krishnagiri Fort in the Salem District. Mr. Longhurst describes this fort as one of the most picturesque monuments in the district. It is situated on a lofty mass of gneiss, for the most part bare and fissured in all directions. The summit is more or less level, but the northern, southern and eastern scarps are sheer precipices, so that the only natural access to the summit is on the west, where there is a long sloping shoulder covered with huge boulders. The fortress seems to have come into importance first in the campaigns of Hyder and Tippu, and it is not surprising that in those days it was deemed to be impregnable. Twice the British attempted to storm the place, and twice they were repulsed. It was only on the 19th March, 1792, when the treaty of Seringapatam was ratified, that the fort passed into British hands, and a garrison was established which was maintained for some years until its final abandonment, owing to an accident, in 1801, when Captain Harry Smith, and many of the garrison were destroyed by the blowing up of the magazine. Colonel Welsh, who visited Krishnagiri in 1809, records that this explosion blew away also considerable portions of the fortifications which have never since been restored. A flight of stone steps originally led up the southern face of the hill from the old town at its foot, but these had fallen into very serious disrepair in recent years. It is satisfactory to record that the work of putting them in order is now in progress.

Burma.

In Burma departmental activity in the field of conservation continues to centre on the palace at Mandalay, where further progress has been made in the repair of the glass mosaic work in various of the palace apartments, in the gilding and painting of the pillars in the West Audience Hall and in the Page's Room, and in refixing a number of carvings. The fact that some missing carvings have been replaced seems at first sight to imply that in Burma the Department is going farther in the direction of restoration than our general policy should permit; but it must be remembered that conditions are fundamentally different in the case of a palace less than a century old and in a country where the art traditions and some, indeed, of the craftsmen themselves are still alive. The posts of the Nursery in the Chief Queen's apartment and those in the passage between the Glass Palace and the Levée Room, which had sunken, were jacked up and supported on masonry footings, and repairs were also carried out to the floor of the King's private apartment, which had sagged. In connection with the proposed lay-out of the palace garden, a sum of Rs. 8,000 odd was spent this year on preliminary work. Ground is being levelled for the lawns, materials have been collected for the paths, and the plots for the shrubberies have been prepared and the plants themselves obtained ready for planting out. But here,

as in the case of the palace buildings themselves, the programme which I drew up in 1918 was so comprehensive, that several years will be required to complete the whole. For some time past the attention of the Department has been fixed on the dangerous condition of many of the *pyatthats* on the walls of the Fort at Mandalay, and repairs to one or other of them have been recorded in my Reports from year to year. This year all the smaller *pyatthats* on the South and East walls have been straightened, as they were found to be inclining one way or the other and likely to fall down at any moment either through the pressure of their own weight or through any sudden squall that might blow over Mandalay, and masonry footings to several of their posts have been provided. The *Yon Nein* and *Yon Myin* (*i.e.*, the porch roofs on the south and north sides) of *pyatthats* Nos. 36 and 45 were dismantled and rebuilt, as they did not admit of further repairs, and this work also was practically completed by the end of the year. The Royal Tombs within the Fort walls were also conserved, Rs. 4,346 being spent on this particular work. The roof timbers of the two small *pyatthats* over the tombs of the Ein-byu-daw Queen and the Medawgyi Queen, situated to the north and south of King Mindon's tomb near the palace, were dismantled and reconstructed, the glass mosaics in the lattice-work were repaired, decayed teak carvings were renewed, and a certain amount of painting and gilding was carried out so as to preserve the original character of these structures. At Pagan, little has been done in recent years, owing to the more urgent nature of the work at Mandalay, but this year the liberal grant made by the Local Government enabled the Department to resume special repairs here also, and a beginning was made with the Tilominlo and Sulamani Pagodas (Plate XII), for which estimates had been passed so long ago as 1907-08. Up to the end of the year a total of Rs. 5,986 had been spent on the more pressing of the repairs, but a good deal still remains to be done. In the case of the Tilominlo the top of the sikhara has been made watertight, the repairs to the stairs, both interior and exterior, and to the base of the pagoda have been completed, and good progress has been achieved with the work of restoring the parapets, battlements and cornices of the upper terrace. In Arakan, archæologically one of the most interesting parts of Burma, but one much neglected hitherto, a start has been made this year by M. Duroiselle who drew up on the occasion of his visit (which will be discussed more in detail further on) a systematic programme of conservation work in which the repair of the Shitthaung Temple has first place (*vide* Plate XIII, *a*). Certain very urgently needed repairs to the roofs of the corridor passages have already been taken in hand with Rs. 3,000 collected for the purpose by the Buddhist public of Mrohaung and Akyab, but the further measures outlined in M. Duroiselle's Conservation Note must await the provision of funds by the Government, who have already agreed to contribute a sum of Rs. 5,000. Altogether expenditure on conservation in Burma came this year to Rs. 53,120, as against Rs. 49,832 the year before. This is, I am glad to say, an improvement over the figures of a few years ago, but when it is remembered that, out of this total very nearly Rs. 20,000 had to go toward annual repairs and maintenance, it is clear that the balance, some Rs. 33,000 only, is still inadequate to our needs, if we

are to cope satisfactorily with the 23 outstanding estimates for special repairs which aggregate something like Rs. 3,50,000.

Indian States, H. E. H. the Nizam's Dominions.

It is gratifying to record that the hope expressed in my Report for 1917-18 (page 18) of securing the services of an Italian expert to execute suitable repairs to the Ajanta frescoes has at length been realised by H.E.H. the Nizam's Government. Professor L. Cecconi and his cousin, Count Orsini, reached Ajanta in the beginning of December 1920 and continued at work there until the end of April 1921. The problems awaiting solution were by no means easy, for on account of moisture and the presence of insects the clay plaster (" rinzaffo ") on which the paintings had been executed was peeling off, while the varnish applied by Mr. Griffiths in the early eighties, in order to bring out the details of the frescoes, was gradually becoming opaque. Thanks, however, to the patience and skill of the restaurateurs, they have now so successfully re-affixed the paintings to the rock that they are likely to last for some centuries yet. As regards the varnish, also, the measures adopted have been quite successful, although it proved to be of varying character and to present very special difficulties in those parts where it is suspected of having been " Copal." But despite the good progress made and the marked improvements already effected, a good deal still remained to be done when the advancing season put an end to the work. It is hoped, however, that in pursuance of its liberal policy to which I have so frequently referred in previous Reports, His Exalted Highness' Government will find it possible to bring Professor Cecconi out to India again next year, to complete the conservation so successfully begun. The expenditure incurred on this work this year was Rs. 60,215, but Mr. Yazdani states that a further sum of Rs. 59,000 has been asked for next year also, in anticipation of Professor Cecconi's return. On other monuments in His Exalted Highness' Dominions Rs. 13,728 were spent, the principal monuments receiving attention being the Mahadeo temple at Ittagi, the Madrasah of Mahmud Gawan at Bidar, the tombs of Abul Hasan and Malik Ambar at Khuldabad, and the Abpashdara tank at Daulatabad.

Mr. Garde, Superintendent of Archæology in Gwalior State, informs me that extensive repairs have been carried out this year to the tomb of Muhammad Ghaus mainly on the lines suggested by me after my inspection of this interesting Early Mughal monument in 1915. The leaking dome has been rendered water-tight, a new teak-wood door of Indian pattern has been provided, and various petty repairs have been carried out to the minor mosques and tombs in the compound, including the tomb of the famous musician Tansen. The Garuda Pillar at Besnagar, which dates from the second century B.C. and is thus the oldest known monument in the State, also received attention, the *kachcha* platform built about its base in later times being replaced by another faced with cut stone, and two of the fifth century caves in the neighbouring hill of Udayagiri had their fallen façades restored. The colossal image of the Seshaysayi Vishnu, also which was being seriously damaged by the rains, was protected by a line of eaves slabs, and a safer approach road was constructed to Cave 20, at the north-east extremity of the hill, which attracts a large number of visitors from the neighbouring villages. At Bagh, in the valley of the Narmada some 90 miles by road from

Mhow, the State possesses an important group of early Buddhist caves whose interest is enhanced by the presence of a series of frescoes on the walls. Unfortunately, the caves are excavated in a weak variety of rock, which has fallen in in so many places that now only four of the caves can be entered. The conservation of even these four will be a laborious and expensive work for the Darbar, which can be accomplished only by degrees and over a term of years. A beginning has been made at Cave No. 2, the largest and the best preserved. Huge blocks of rock which had fallen from the verandah roof were broken up and removed, the mud platforms in the interior, built in later times by certain Gosains who used the cave as a residence, were dismantled: doors and windows blocked up by the same intruders were opened out again; and the débris and rubbish accumulated throughout the cave were cleared away. The material so obtained was used for the construction of a road which it is proposed to make along the hill side toward the south-west, thus improving the access to all the surviving caves. In addition to these early monuments, work was resumed also on the Koshak Mahal, a 15th century building originally in no less than four storeys, ascribable to the time when these parts were under the Sultans of Mandu. It stands near the village of Fatehabad, about three miles to the west of Chanderi, and is in a semi-ruinous condition, largely choked with its own débris. The clearance which was begun seven years ago had to be stopped owing to the war, but the work has now been resumed and certain structural repairs have also been sanctioned. It will be more convenient, however, to report on this work in detail when further progress has been made.

From an archæological point of view one of the most fascinating sites in India is Harappa, on the old bed of the Ravi, in the Montgomery District of the Punjab, south-west of Lahore. It appears to have been visited by Masson in 1826, by Burnes five years later, and by General Cunningham in 1833 and 1856, but the General published no detailed account of the ruins until his Report for 1872-73. The discovery at Harappa of the very remarkable seal illustrated in figure 1 of Cunningham's Plate XXXIII in this volume, and later of a few more now in the British Museum, suggested that at this site we have the remains of a city of very great antiquity and of seemingly quite peculiar culture, as the legends on the Harappa seals are one and all totally unlike any other form of script known in India. The desirability of continuing the exploration of the remains begun on so small a scale many years ago by Cunningham was of course obvious from the first. But Cunningham himself records the fact that the brick remains within the mounds of Harappa had sufficed the contractors to ballast 100 miles of the Lahore-Multan Railroad, and it was apparent that most of the actual walling had thus been long ago removed. The area is a wide one, nearly 2½ miles in circumference according to Cunningham, and the mounds which rise conspicuously within this circuit are themselves of considerable elevation the highest among them being estimated by Mr. Daya Ram Sahni at 60 to 65 feet. As the present day surface nowhere gives any clue to the location of the ancient structures underground, except where empty trenches and tunnels show the position of walls quarried by the contractors afore-mentioned, and now of course

Exploration. Hindu and Buddhist Monuments, Punjab, Harappa.

no longer existent, the problem presented to the explorer is one of exceptional difficulty, hunting for the proverbial needle in a haystack being but the pastime of an idle hour in comparison with trying to locate the points of real value in the Harappa field. Rai Bahadur Daya Ram Sahni has nevertheless made a beginning with this difficult task in the season under review, and I am glad to say has met with encouraging results, though less, perhaps, than he had hoped for. Most of the mounds marking the site were completely honeycombed, Mr. Sahni reports, with the diggings of the modern brick-hunters. The three which seemed to have suffered least, namely those marked (A) and (B) on Cunningham's plan and a third (F on the plan of recent excavations) which is shown without a letter to the east of mound A & B on Cunningham's plan, had been selected for the preliminary excavations, and had been acquired under the Land Acquisition Act. Of these three, Mound F, seemed the most intact of all, and a large trench nearly 500 feet long and sixteen feet wide was sunk across it, only to disclose the fact, however, that appearances were deceitful, and that the ancient brick walls had been quarried here as elsewhere. The only house of which an approximate plan could be reconstructed came to light at the northernmost extremity of the trench. A seal found in this building is reproduced in Plate XIII. One of the other seals of the same type, also shown in the illustration, were found at the other end of the trench, and it is to be presumed that the fragmentary structural remains uncovered here and there in the intervening area are contemporary with these matrices. Like the seal published by Cunningham, all these new ones exhibit the device of a bull, without the hump so universal in Indian cattle, and legends in the same inscrutable script, to the interpretation of which we have as yet no manner of clue. The other portable antiquities recovered in this Mound F, though not numerous, all point to a high antiquity. A number of terracotta figurines were found in the early style of those from the oldest strata at Bhita and other sites, and a large variety of earthen vessels, from large *chatis* for storing water or grain down to tiny objects of domestic use, such as a contrivance for making twine, children's toy carts, real *mrichchhakatikas*, ink-pots, etc., etc. The only personal ornaments recovered were bangles, or beads for necklaces, a remarkable feature of these being that all are of clay except a single pair of bangles of exceptional excellence and interest, which appear to be among the oldest known specimens of glass yet found in India (Plate XIII, *e* and *f*). It is worthy of note, also, that up to date no metal objects of any kind have come to light with the exception of one or two iron nails. Another trial digging made this year within the Harappa area was on the mound marked A & B on Cunningham's plan. This mound rises some 65 feet above the surrounding ground, and is the highest at Harappa. On the slopes of this mound a space measuring 55 feet by 25 feet and situated to the west of the "Naugaza tomb" shown in Cunningham's plan, was excavated to the depth of about 13 feet. The upper stratum yielded nothing, but some four feet beneath the surface Mr. Sahni came upon a mass of stone fragments, some of these bearing the high polish of the Mauryan period, although others were coarsely dressed and perhaps of later date, notably the fragments of an arched

window which the Rai Bahadur assigns to the Kushana period. Digging then proceeded to lower strata, and at the depth of thirteen feet revealed the floor of a brick building the walls of which are still standing to a height of about seven feet, with a thickness of three. One of the rooms of this structure must have been a fairly large hall, and another room was traceable, which had however been dug into and its walls removed brick by brick by the villagers. The minor antiquities found in this building included a number of terracotta figurines, and the base of a terracotta statuette, but on this base only the feet of a standing figure now remain, with some uncertain object between them. Thus, although the results attained so far are undoubtedly meagre, they are important in that, according to Mr. Sahni, they prove that the Harappa seals and their curious pictographic legends belong to the pre-Mauryan epoch: and it is to be remembered that the digging to date has pierced only the topmost levels. Fifty feet of depth remain to be explored, and it is already evident that the examination of these lower strata is likely to lead to valuable discoveries. Two noticeable features of the site so far are, (*a*) the absence of cult objects (unless the figure just described bore this nature originally, which seems improbable), and (*b*) the uniform size of the bricks $11'' \times 5\frac{1}{2}'' \times 2\frac{1}{2}''$ to $3''$. The advantages of this size for bonding are obvious, but so far as has been observed, this convenient proportion of two widths to the length has not yet been met with at any other ancient site in India.

At Taxila, further progress has been made with the exploration both of the Scytho-Parthian city of Sirkap and of the earlier city on the Bhir Mound, but, inasmuch as the work on both these sites is still continuing, I shall, for the sake of clearness and simplicity, reserve for my next year's report the account of my operations on the former site, and in this report I shall restrict myself to those on the Bhir Mound, including in my description the results achieved in the year 1922 as well as during the preceding twelve months. My plan of operations on this site was, as I explained in last year's report, in the first place to open a long trench running east to west across the middle of the site and to sink this trench sufficiently deep to afford a clear idea of the stratification down to virgin soil: secondly, to clear a representative area of the uppermost stratum and then, where the remains in this stratum proved to be most ruined and barren, to descend to the second stratum and so on to the third and fourth. The first part of this plan had been carried into effect during the previous year and the existence of three distinct strata of buildings had been revealed, the floor level of the uppermost being from 3 to 4 feet below the surface: of the middle one from 6 to 7 feet, and of the lowest one from 12 to 15 feet, with certain intermediate strata not so clearly defined. Particulars of these strata and of the antiquities found in association with each, are given in my Report for 1919-20. During the two succeeding seasons, the second part of the programme has been taken up, and, though lack of funds and the need for rigid economy have prevented me from prosecuting the work on such comprehensive lines or of attaining such definitive results as I had attained in Sirkap, still enough has been done to disclose the general character of the buildings lying nearest to the surface and to amplify and confirm the conclusions which I had previously drawn as to their age. Only

Taxila.

in one particular is there reason for modifying these conclusions. From the remains found in the first trial trench it had appeared, as stated above, that there were three, and only three clearly defined strata, and I had assumed that the topmost of these three comprised the latest buildings on the site. But it now transpires that there was a still later stratum, of which a few fragmentary and scattered remains are all that survive. Accordingly, we must presume that some of the later antiquities found near the surface belonged to this uppermost stratum which must therefore be referred to the 3rd or 4th century B.C., while the next stratum below it, which comprises the great bulk of the buildings now excavated must be relegated back to the 4th or 5th century B.C. Henceforth this stratum will be designated the second, and the two beneath it the third and fourth strata, respectively.

The majority of the remains in the second stratum which have now been laid bare, cover an area of about three acres, immediately north of the trial trench alluded above. They consist of blocks of dwelling houses with a broad street running betwen them and divided one from the other by narrow, winding lanes, of which one is provided with a drain down its middle. In their general appearance these remains are not unlike those previously laid bare in the Scytho-Parthian town of Sirkap and they resemble the latter in that they are planned, as all oriental houses were planned, on the same basic principle of the open quadrangle flanked by chambers on its four sides, and, with one single exception, in the absence of doorways. On the other hand, there are certain characteristics in which the Bhir Mound buildings differ essentially from the later ones in Sirkap. In the first place, their general lay-out is more fortuitous and irregular, the winding street and narrow crooked lanes presenting a marked contrast with those in the later town. Secondly, the houses themselves, though planned on the same principle are nevertheless much less symmetrical than the later structures. Thus, some of the dwellings are wholly irregular in plan, and in some the open court, instead of having chambers on all four sides, has them on two or three sides only, and the court itself is much smaller in proportion to the size of the house. The third feature which distinguishes them from the later buildings, is the construction of their walls; for, although the masonry on both sites is rubble, on the Bhir Mound it is noticeably more " random " in character, yet withal more compact, the compactness in many cases being due to a soft binding shale used for filling the interstices between the larger stones. Whether it would be safe to assume that the features noticed above were distinctive of all contemporary buildings, is open to question. It may be that the structures on the Bhir Mound belonged to a poorer class of people than the larger and more elaborate edifices in Sirkap—a hypothesis which would account to some extent for the meaner and more haphazard character of their construction, but making allowance for this possibility we shall not, I think, be far wrong if we regard the masonry of these buildings on the Bhir Mound as generally characteristic of the 4th or 5th century B.C. and that in Sirkap as characteristic of the beginning of the Christian era, and we shall not be far wrong either if we regard the Scytho-Parthians, under whose rule they were erected, as generally responsible for the planning of the

Sirkap streets and buildings. On the other hand, it would be unsafe to assume that in the 4th or 5th century B.C. all houses and streets were as irregular as those brought to light in the Bhir Mound, or that in the first century A.D., they were all as uniformly planned as the remains in Sirkap. The impression produced by the symmetry of the Ṣcytho-Parthian streets and buildings is that the town was laid out and built in accordance with one definite plan, and that most of its houses were erected simultaneously, whereas the buildings on the Bhir Mound seem to have been erected at different times and according to no systematic design.

Among other features characteristic of the Bhir Mound but not present in Sirkap, I drew attention in my last year's Report to certain curious "pillars" and narrow "wells." Many more examples of these pillars and wells have now been excavated, and, though the riddle of the former still remains unsolved, new light has been thrown on the use for which the latter were intended. That the majority of them were designed not for the drawing of water, but as soak-pits for the disposal of sullage, there can now be little doubt. This is evident not only from the narrowness of their shafts, which vary from 2′ to 3′ 6″ in diameter, and from the fact that the *pakka* masonry of the walls is carried down no more than 13 or 14 feet below the surface, but from the discovery that one of the wells was packed with numbers of earthen vessels of various shapes and sizes—all turned upside down and obviously laid there with some care, precisely as earthenware vessels, kerosene tins and the like are used in modern "soak-pits," their purpose being to prevent the pit or well from collapsing while at the same time not interfering with the soaking—in process of the sullage. From the well referred to, 164 vessels were taken out—60 broken and 104 intact—comprising *gharas*, *chattis*, *lotas*, coolers, and pots of various other forms (Cf. Plate XV, Nos. 9, 10, 15, 17 and 19). These vessels filled the whole shaft of the well to a depth of 12′ 7″ below the *pakka* masonry, that is to a depth of some 25′ from the surface. Below that point the digging was carried several feet further, but no potsherds or other antiquities were found, nor were there any signs of the soil ever having been disturbed before. Indeed, the sinking of so narrow a shaft to a greater depth would have been an extremely difficult and hazardous task, and, even if it had been carried down another 40 or 50 feet to the water level, it would have been quite impossible to prevent the mud sides from caving in. Another well of similar construction and packed in identically the same fashion with earthenware vessels was discovered by me in 1913-14 at the northern end of the Bhir Mound, and it may be presumed, therefore, that the practice of making these soak-pits was not an altogether uncommon one.

Among other objects of interest found in these buildings may be noticed a number of large stone jars intended no doubt for oil or grain, and a receptacle, also perhaps for grain, composed of six rings of terracotta, similar to the rings ordinarily used in the construction of wells not only in this neighbourhood but in other parts of India also. Of the smaller antiquities some selected specimens are illustrated in Plates XV to XVII. These antiquities comprise earthenware vessels of many varieties; small reliefs and toys of terracotta; stone dishes and saucers; toilet and other articles of bone, ivory and copper; bronze and gold

ornaments; iron implements and domestic utensils; beads and gems, coins and a few other miscellaneous articles. Of the earthenware vessels, I have already referred to those found in the soak-pits; of the other specimens illustrated in Plate XV, No. 1 was found at a depth of over 13 feet and No. 2 at a depth of over 10 feet, and both of these, therefore, belong to the 3rd or 4th stratum and must be relegated to a much earlier period. The rest of the specimens on this plate all belong to the 1st and 2nd strata. On the succeeding plate (XVI) Nos. 1 and 2 belong probably to the same vase, No. 1 being a fragment from the side, and No. 2 from one of the handles. They are of grey clay burnt to red on the outside and covered with black paint. These two fragments derive especial interest from the conventional leaf design and "bead and reel" moulding, obviously classical in character and reminiscent of the capitals of the well-known Asoka pillars, but still more from the presence of the head in rough relief at the base of the handle, which appears to be the familiar head of Alexander the Great wearing the lion's skin. Another kind of ware of exceptional interest, which has also been found occasionally on other Indian sites, is a fine red clay finished with a highly lustrous and metallic looking polish, the composition of which has yet to be determined. The terracottas illustrated in Plate XVI are all in the characteristic early Indian style recalling to mind the primitive terracottas from early strata at Bhita and other sites in Hindustan. Noteworthy among them are two moulds (Nos. 3 and 4) referred to again on p. 23 and the two squatting figures, Nos. 13 and 14, with the typical early Indian headdress, and No. 17, a child's rattle in the form of a cock.

Of the engraved gems the first one figured on Plate XVII is a scaraboid of chalcedony graved mainly with the drill in the Achæmenian fashion and probably of Persian provenance. Both design and technique are coarse and crude, and it is not clear whether the two animals are meant to be winged horses or bulls and whether the front one to the right is human headed or not. No. 2 is a pyramidal seal of greenish beryl-like glass, bearing on its base the figure of a man standing with staff in hand, and circle and *nandipada* symbol in front. No. 3 is a clay sealing bearing on both sides a humped bull standing to left, with *nandipada* above the hump. The female head *en face*, which follows, is the impression from a mould of terracotta. Nos. 5—15 are pendants of finely selected agate stone and brilliantly polished. Nos. 16 and 17 are cornelians adorned with patterns in white, burnt into the surface of the stone, and the four next are also cornelians of a deep ruddy colour cut into various shapes, No. 18 being a scorpion, No. 20 a spiraliform ear-ring and No. 21 a bird perched on a cross. No. 22 is of white chalcedony and No. 23 of white opaque glass. The pendant amulet figured in No. 24 is of copper and the ram's head next to it of ivory and of excellent workmanship. Nos. 26 and 27 are of gold, the latter being one of four such bangles found together in one spot. They are of thin beaten gold shaped on a core of shellac, their ends terminating in lion heads. No. 28 is a heart shaped pendant of curious cloisonné-like technique. It is of copper gilt divided into cloisons, in each of which is a minute disc of mica fixed onto a bed of lac and originally, no doubt, backed by some colour. The last two objects on Plate

XVII are unique and their purpose is unknown. The broken one originally had a diameter of 4″; the entire one has a diameter of 2⅝″. Both are of sandstone, probably from Chunar, where the pillars of Asoka were quarried: both are finished with the high polish which characterizes Mauryan stonework, and both are adorned with concentric cable mouldings divided by cross-and-reel or figured bands. In the fragment of the larger specimen (No. 29) the middle band is relieved with elephants, and within this band are the remnants of a mountain (?) conventionally portrayed with a hand on one side and a hand holding a bow on the other. In the complete specimen the figures around the central hole consist of three standing figures of (?) Prithvi, the Earth goddess, alternating with the Indian "honeysuckle" design. For jewel-like workmanship and exquisite finish these two objects are unsurpassed by any other specimens of stonework from ancient India.

Apropos of cut stones and gems I noticed in last year's report the discovery of a brilliantly polished white substance, which bore a remarkable resemblance to fine semi-translucent porcelain. Several more pieces of this substance have since been recovered on the site and prove on examination and analysis, to be a natural stone, but of a kind not previously known to geologists. For the analysis and examination of this stone I am indebted to the kindness of Professor H. B. Baker and Professor A. Brammall of the Royal College of Science at South Kensington, whose reports are given in Appendix A, along with a letter on the same subject from Sir Cecil Smith, Director of the Victoria and Albert Museum, to whom my thanks are due not only for the interest he has taken in this particular matter but for the unfailing help which he is ever ready to render to the cause of Indian archæological research. As to the difficulty suggested in Sir Cecil Smith's letter of assigning these lathe-turned and highly polished stones to so early a date as the 4th or 5th century B.C., it is disposed of by the discovery of many other stones, such as agates and rock crystal, turned on the lathe and polished to an equal degree of brilliancy. The cutting and polishing of stones was, as I have often pointed out, one of the arts in which Indians excelled at a very early period, and it seems to be a fact that from the 4th or 5th century B.C. onwards this art not only did not improve, but gradually deteriorated.

Of the 181 coins found in these buildings or in the trial trenches described below, six come from the third stratum, and the remainder from the second and first strata, the distinction between these two strata not being clear enough to warrant a separation of the finds, though it may be taken for granted that the later coins (*e.g.*, one of Demetrius of the "shield and trident" type) belonged to the last settlement on the site. Of these 181 coins, 5 are of silver, 5 of billon and 171 of copper. In shape they are predominantly circular. All the silver and billon issues are single die-struck coins of the "cross and ball" type. Of the former two are circular and three oblong bars struck like punch-marked coins, but only at the ends. These were found in the third as well as in the upper strata. The billon coins all come from the first or second strata. Of the copper issues 22 are "punch-marked" and double struck, the symbols on them being the well-known chaitya, svastika, nandipada, solar symbol, bull, rhinoceros and

tree. Of the rest, 58 are single and 58 double die-struck, most of the types being such familiar ones as the "svastika with nandipada in the angles" or "chaitya and nandipada" or "lion and elephant," but they include also among their number specimens of the much rarer "chaitya and monolith" (C. A. I., Plate II, *6*) and "four crescents round circle" (*Ibid.* IX, 2) which I should prefer to designate "quadruple nandipada;" and they include also a hitherto unpublished type (of which 27 specimens have been recovered) which may be described as "chaitya and altar," the altar being an inverted U with horizontal bar across the top.

Pari passu with the clearance of the group of ruins described above, a series of trial trenches was sunk over the northern half of the Bhir Mound running in the first place parallel to one another from north to south and then crossed by another series at right angles to them from east to west, my object being to obtain by this means a general idea of the discoveries that may be expected in this half of the site. To judge from the remains laid bare in these trenches, which, be it remarked, measured more than 6,000 feet in length, it appears that most of the structures in this part of the city, and probably in its southern half also, are of the same type as those already exposed, and for the present at any rate it would probably not be worth while to extend the digging beyond the boundaries of the blocks partially laid bare or beyond the limits requisite for excavating a reasonably representative area of the third and fourth strata. Only at one point did this network of trial trenches disclose a building of an exceptional type. This was some 200 yards to the north-west of the main excavation, where the finding of a massive square masonry pillar in one of the cross trenches led to the opening out of the trench and the disclosure of a large oblong hall (59 feet by 24 feet) with three square pillars down its middle (Cf. Plate XIV, *b*). The walls of the room are of the usual rubble masonry largely compacted with shale and are standing to a height of about 4′ 9″ above the floor level, but are not pierced by any openings. The floor of hardened clay half burnt to terracotta is still discernible in places, its level coinciding with the dividing line between the rough foundation masonry and the more carefully laid superstructure of the walls. The major axis of the room lies approximately north and south, and on this axis the three pedestals are ranged side by side at intervals of nearly 11 feet, the middle one standing in the centre of the room. Each of the three pedestals consists of a square shaft (the two outer ones 3′ 6″, the middle one 3′ 9″ square) of rubble masonry rising to a height of 4 feet above the floor and surmounted by a single massive slab of limestone approximately square in shape and some 5 to 8 inches in thickness but very rough and uneven. The slabs of the two outside pillars show signs of having been calcined and split by fire; on the central one there are no such signs. What purpose this unusually large room served and to what use the low square pedestals were put, are questions which there are not as yet sufficient data for answering. Like the round pillars with rough stone caps in other buildings of Bhir Mound, the square pedestals seem designed to have served some other purpose than as bases for structural timber supports; for, had they been meant as such, we should not (apart from other considerations) have expected either that the

plinths would be so massive or that the slabs would be so uneven, at any rate on their upper surface. The marks of burning on the southern and northern pillars may, of course, have been caused by the general conflagration of the building. On the other hand, it is tempting to see in these marks evidence of their use as altars either for fire or burnt sacrifice, the central one, which was unburnt, having conceivably served for some other ceremonial purpose. But the evidence at present available is too slender to justify such a speculation. The core of the central pillar was examined and the ground excavated for a depth of four feet beneath its foundation, but the excavation yielded nothing except bones, potsherds and pieces of broken glass and lapislazuli. The foundations of the chamber wall were also opened up on the middle of the west side and found to descend to a depth of some 7 feet below the floor level. Among the smaller finds made in the course of this examination were a rectangular silver punch-marked coin, a glass bead, earthenware, cup and bone rod and fragments of shell and glass bangles, found between 1 and 2 feet beneath the floor level, and a terracotta sealing with the figure of a lion on each of its five faces, found three feet deeper.

Adjacent to the hall described above is a narrow lane, and on the other side of this lane is a complex of chambers, in one of which were several coins, a terracotta mould of a grotesque old man (Plate XVI, 4) and a large number of terracotta reliefs depicting a male and female figure standing side by side (Plate XVI, 8), while in another chamber a little to the south was found the matrix from which the reliefs were fashioned, but it is to be remarked that all these objects came from a level some two to four feet above the floor of the hall. The greater part of this building, as well as of the building to which the hall with the three pedestals belongs, still remains to be excavated.

United Provinces.

In the United Provinces the Superintendent of Hindu and Buddhist Monuments carried out no excavations during 1920-21, but during a five weeks' stay at Muttra in the hot weather, where he was engaged on preparing an account of the exploratory work in that neighbourhood done by Rai Bahadur Pandit Radha Krishna, Mr. Sahni succeeded in discovering in company with this indefatigable Curator of the Local Museum, two important sculptures. One of these, which is illustrated in Plate XVIII *a*, is now worshipped as Gokarnesvara Mahadeva, in a temple outside the Brindaban gate of Muttra City, the temple standing on a lofty mound within which the image is said to have been found originally. The statue, which is six feet in height and evidently represents some Kushan king, is seated in Indian fashion on a Simhasana, and is in perfect preservation, including head and headdress, in contrast to the other known statues of this dynasty. As in the statue of Wima, the dress in this case also consists of a loose open coat which Sir Aurel Stein considers identical with the coat worn to-day by the inhabitants of Turkestan, who call it by the name of *chhappan*. The head-dress is the high conical cap already known from several heads at Muttra and from bas-reliefs elsewhere in early India. The form is evidently of Central or West Asiatic origin and is not unlike that of the *kulah* familiar on the Frontier and in Afghanistan even now. This statue, therefore, although it obviously cannot give us their portraits, nevertheless does give us very useful information

as to the general style and character of the missing heads of the Kanishka, Wima and Chastana statues, and for this, as well as for other reasons, is of special interest. Whether the image is inscribed with the royal name or not, remains uncertain. Permission to take the photograph here reproduced was obtained only with difficulty, and there was no possibility of examining the pedestal properly for an epigraph. On the analogy of other Kushan statues, however, it is reasonable to suppose that this one also is inscribed, but there is, of course, no telling how long we may have to wait for permission to make the requisite examination of the base. The other of the two sculptures discovered by Mr. Sahni and Pandit Radha Krishna is a female statue now worshipped as Manasa Devi in a modern temple on the top of a mound near the village of Gopalpur, twelve miles from Muttra on the Bharatpur road. The image is 5 feet in height and 2 feet and 2 inches across the base (Plate XVIII, *b*). It is carved in the round, like other sculptures of the earliest age in India, and represents a female figure seated on a semicircular stool of wickerwork. The head, unfortunately, has been renewed in modern times (like that of the Bodhisattva from the Gayatri Tila, now in the Muttra Museum), and the entire front of the image has been sadly defaced, but the bare feet are preserved, with their large thick anklets, and between these feet on top of the pedestal in Brahmi characters like those on the Parkham image, is an inscription in part identical with the one on that statue. The epigraph is in precisely the same position as the one on the Wima statue, and like it also is in three lines. But despite the partial parallelism with the writing on the Parkham image, the reading and interpretation are not yet clear, and further study will be requisite before any satisfactory attempt at translation will be possible. The historical and artistic interest of both the new images is, however, obvious; and it is hoped that ultimately it may be possible to secure them for Government.

Frontier Circle. In the Frontier Province exploration was undertaken at only one site, namely, Jamalgarhi. With the exception of some very minor works, this monument has received little attention since the excavations of Lieutenant Crompton, R.E., in 1873 stripped the site of the greater part of its sculptures. The removal of the débris left by these devastating researches entailed considerable labour, but was a necessary preliminary both to conservation and to the preparation of a complete and detailed plan of the site. The exterior walls of the encircling chapels of the Main Stupa have now been cleared to their bases, and the courtyard west of the Conference Hall and the front of the vaulted chambers to the south-west of the latter have been freed from débris, as well as a number of structures north of the Conference Hall and east of the Main Stupa. At Jamalgarhi, exploration has so far revealed no monastery of the usual central courtyard type, and the monks appear to have been accommodated in buildings of various kinds scattered all over the site. Whether this was so originally cannot be stated with certainty until the courtyard west of the Conference Hall has been further explored. One thing is, however, certain, that the Conference Hall and the structures with vaulted chambers to the west of it, as well as the connecting wall which forms the southern boundary of the great courtyard are later additions. The more

ancient Conference Hall and Refectory seem to have been situated to the east of the Main Stupa and north of the present Conference Hall. Of the isolated monastic buildings referred to above an interesting example has been recently cleared on the west of the Main Stupa. This is a curious double-storied structure with external staircase and three rooms on the ground floor, which are faced by a closed verandah pierced with one door and two windows in front and with a large window at each end. The removal of the débris at the south-east corner of the Conference Hall has disclosed the original entrance to the site, and the ruined steps of the long pathway leading to the entrance of the large courtyard are clearly traceable. A small but ruined stupa south of these steps has been excavated and numerous stucco heads in excellent preservation recovered, as well as traces of the stucco figures which once adorned the walls of the little courtyard in which it stood.

The antiquities recovered during these operations numbered 270, comprising images, pedestals of statues, friezes, heads, atlantes, reliefs of legendary and devotional scenes, stone lamps, terracotta heads, finger rings in copper and iron, miscellaneous iron objects (principally bolts and nails) two Kharoshthi inscriptions and five Little Kushan silver coins in excellent preservation but of a known type. A plan of the whole site is being prepared and will be published as soon as the complete clearance of the outlying buildings renders exact measurement possible.

Eastern Circle.

In the newly created Eastern Circle of Bengal and Assam no excavation was undertaken in this, the first year of Mr. Dikshit's appointment. But in the course of the three months spent on tour several ancient sites were more carefully examined than heretofore, with interesting results. Thus, at Mahasthangarh in the Bogra District, which General Sir Alexander Cunningham identified with the important ancient city of Paundra-vardhana, Mr. Dikshit surveyed an interesting ruin known locally as the Medh or *Behular Basar Mandir*, "Behula's bed-chamber," where there are traces of walls constructed of bricks measuring between 10 and 15 inches and thus of manifest antiquity. The Medh as a whole is an irregular oblong or apsidal mound some forty feet high toward the east, where the edge of the mound is rounded off after the manner of an apse, while on the west the edge is rectangular. No tradition exists to show the nature of the structures buried beneath these ruins, but their age is apparent, and the fact that Cunningham's proposed identification with Paundra-vardhana receives partial confirmation from the local *Karatoya Mahatmya* invests the site with special interest and makes its further exploration desirable. The mounds included within the limits of the ancient city stretch for some distance on all sides, and Mr. Dikshit has wisely had the whole tract protected, to prevent unauthorised diggings until such time as funds are available for proper excavation by the Department.

In the Goalpara District of Assam the examination of the Stone Ghat and the Panch Pir Mound at Dhubri led only to negative results, as was the case also with the Ram Raja's Garh at Abhayapuri. The last named turned out to be nothing but an earthen embankment around an oblong tank of doubtful antiquity.

while the Panch Pir Mound appears to Mr. Dikshit to be mainly an alluvial formation. Of the Stone Ghat a few more or less nondescript fragments remain, but neither here nor at the other places was anything found which could determine the age of the remains. Various centres in the Kamrup and Nowgong Districts also were visited and further data about the Rock-cut images at Gauhati and the Kamakhya Temple near Silghat are recorded in the Eastern Circle Report for 1920-21 (pages 37 and 38), but our knowledge of all these pre-Ahom remains is too scanty at present for very satisfactory conclusions to be drawn, and further exploration is a desideratum.

Central Circle. At Nalanda this year Pandit Hirananda Shastri's attention was mainly focussed, so far as the exploratory work is concerned, on the further clearance of the semi-detached monastery he had discovered in the previous season lying at the south-west corner of the main monastery and designated Ia. This he has now succeeded in excavating in its entirety, save for a portion of the outer wall near the south-east corner, which falls under a temporary deposit of spoil-earth. In plan it now transpires that the new building is identical with the monastery B on the main site (Site I), with which, too, it is almost on a level, and like Monastery B it, too, stands over the ruins of at least one older structure. Of this underlying building little information has yet been gained, but the whole interior and even the outer walls of Ia have now been cleared and a plan of them is published in the Central Circle Report for 1920-21. This shows that the monastic quadrangle has seven cells on each of its three sides and six on the fourth side, excluding the chapel on the south and the antechamber on the north, with a verandah skirting the court as usual, though its continuity is interrupted by partition walls in the north-west and south-east corners. A flight of stairs between the first and second rooms in the north row evidently led to the second storey of the monastery, of which no trace has now survived, and a niche-like window in a cell in the west row near the north-west angle gives on to a narrow passage between this Monastery Ia and some building adjoining it on the west and thus intervening between it and the stupas excavated in previous years at Site No. III. The further examination of this western structure will be of interest, since it is important to discover the links connecting the monastic area with the long line of stupas on the west; but Pandit Hirananda Shastri apparently found no opportunity to investigate the structure this season, and his Report gives no information beyond a conjecture to the effect that in point of age the west building is later than Ia, as its alignment has disturbed the outer wall of the latter to some extent. At Site No. I itself Mr. Shastri undertook an important extension of the work by opening up the main entrance more particularly on the court-yard side. This necessitated cutting through the pavements of the upper strata, and proved to be a specially slow and difficult work owing to the soil having been rendered sometimes hard and sometimes peculiarly friable by the action of some great conflagration, or conflagrations, to which at least one of the monasteries built on this site owed its destruction. Mr. Shastri succeeded, however, in clearing the porch of the monastery on the B level (supposedly contemporary with monastery Ia), and the

entire southern half of the west verandah of the same. This is the verandah which yielded so satisfactorily in its eastern and south-eastern portions, and it is not surprising that here on the south-west also a rich booty has been retrieved. Altogether Mr. Shastri reports that more than 500 antiquities have been added to the Nalanda collection in this single season, including large numbers of bronze or copper images and seals which are a constant feature of this site (cf. Plate XVIII *c* and *d*); but by far the most interesting find of the year was a long and important record inscribed on both sides of a large copper-plate, surmounted by a seal soldered to its top, which bears an emblem the dharmachakra flanked by two gazelles, which is the insignia of Nalanda. This plate lay among the débris of the porch to the main monastery on the B level. It had suffered in the fire which destroyed the building and was at first so encrusted with burnt plaster, etc., as to be undecipherable. Thanks, however, to the skilful labours of Mr. Sana Ullah the entire surface has now been chemically treated with marked success, and Mr. Shastri finds practically the whole inscription intact and legible. The seal itself bears the legend: *Sri-Devapaladevasya*, *i.e.*, the Devapaladeva who was the third sovereign of the famous Pala dynasty of Eastern India and the most powerful monarch of this early Bengal house. The plate bears 42 lines on the obverse and 24 on the reverse, the language being Sanskrit and the script Nagri of early type. It is dated in the year 38 of the reign of Devapaladeva, and the introductory portion proves to be identical with that of the Monghyr grant, though it enables us to improve on a few of the readings of that record which Prof. Kielhorn gave on the basis of the first defective lithograph.[1] The fact that the original Monghyr grant (discovered in 1780 and supposed to be the first Sanskrit inscription ever brought to the notice of European scholars) has long been lost invests the present version with added value, but it is not in this or even in the main record that the chief interest lies. This main record tells us of the grant of certain villages in the Rajagriha and Gaya districts of the "Srinagara" (Patna) Division for the upkeep of the monastery at Nalanda and the comfort of Bhikshus coming there from the four quarters, for medical aid, for the writing of "dharma-ratnas" or religious books, and for similar purposes. Then, from about the middle of the eighth line on the reverse, where the imprecatory verses end, we have what Pandit Hirananda Shastri calls a sort of postscript "which glorifies the ambassador Bala-Varma and his liege-lord Sri Balaputradeva, the king of Suvarnadvipa." This Suvarnadvipa Mr. Shastri would identify with the modern Sumatra (an identification strengthened by the fact that Balaputradeva is described as the grandson of the king of *Yavabhumi*, which is evidently Java), and inasmuch as the epigraph shows that King Devapaladeva granted these villages and apparently built this monastery of Nalanda at the instance of this king of Sumatra, interesting political questions of the 9th century are involved which Pandit Hirananda Shastri promises to work out in a separate contribution to the *Epigraphia Indica* in due course.

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[1] Cf. *Ind. Antiq.* Vol. XXI (September [illegible]), p. [illegible].

Western Circle.

In the Western Circle excavations were continued practically throughout the year at the site of the Peshwas' Palace in the Shanwar Wada, Poona. The preliminary examination of the whole accessible area has now been completed, no further extended excavation being possible until the removal of the Small Cause Court building, unfortunately erected in the centre of the enclave. The work of this season consisted mainly in cleaning out certain old cisterns and tanks which came to light. One of these is a very remarkable tank edged with dressed stone and plastered lower down to a depth of 18′ 7″ and containing rows of square inches, which were apparently designed to carry coloured lights behind a cascade of water. Up to the end of this season the excavation of this tank had advanced to a depth of 28′ 8″ in all without reaching the bottom, the last 10 feet of this depth being also covered with plaster though without niches. The most important feature of the year's work, however, was the discovery of certain portions of the giant fountain mentioned in my Report of last year as containing 196 jets distributed symmetrically inside a vast expanded lotus of sixteen petals. The discovery of these stones leads to the solution of several problems connected with the original shape and structure of the fountain and will assist in the restoration of it on assured lines.

At Sholapur also the excavations mentioned in last year's Report were completed and the entire plinth of the 11th or 12th century Chalukyan Temple discovered under the inner wall of the old Fort was cleared on all sides to a width sufficient to permit of visitors walking around the whole structure. The old drain of the temple was also discovered and so cleared as to permit of its serving as a drain for the carriage of rain water. The sides of the excavated pit were then built up with a dry stone wall, above which the earth was sloped back to the height of the existing ground level and covered with dry stone pitching. Thus, no further excavation as such will be required here, but it still remains to build steps for the use of visitors and to remove certain earthen ramps constructed for the convenience of workmen. A total sum of Rs. 2,225 was expended on this work.

Southern Circle.

In the Southern Circle Mr. Longhurst had the good fortune to discover an important and hitherto unrecorded group of rock-cut temples at a place called Bhairavakonda, 28 miles north-west of Udayagiri, in the Nellore District. There are eight temples in all, excavated in a rocky hillside forming the western face of a picturesque ravine. On the eastern side occurs a crudely carved figure of Bhairava and several tiny rock-cut memorial shrines including one dedicated by the Princess Lokama in the early 9th century, which is distinguished by two panels, one on either side of the entrance, containing figures of Brahmā and Vishṇu. Similar little memorials occur plentifully on the other face of the ravine also, in the spaces between the cave-temples, but Mr. Longhurst is of opinion that all of them are later in origin than the temples themselves. The latter are all of one type, differing only in degree of ornamentation, the plainest being so closely akin to the Pallava temples of the earliest or Mahendra Period, and the more ornate so like temples of the Mamalla Period, that Mr. Longhurst believes them all to have been erected by the Pallavas, and to

range in date from the 7th to the end of the 8th century. The actual cellae, all of which are small and plain, usually about six feet square on plan and six feet in height, all contain lingas. The entrances are uniformly guarded by huge Dvārapālas leaning on clubs. The northern one of each pair generally wears the peculiar bull's horn headdress characteristic of the Pallava style, and both are flanked, in all cases where the width of the façade permits, by four-armed figures of Brahmā and Vishṇu. These Mr. Longhurst considers to be later additions and not an integral part of the original design except in the case of Temple 7, the latest in the group. In his Report for 1920-21 Mr. Longhurst gives a long and detailed account of each of these cave-temples with two illustrations, from which it is clear that this fortunate discovery has added an important group to the list of really early Hindu monuments in the Southern Presidency.

Although no formal excavation work was undertaken in Burma during 1920-21, important exploratory work was begun by the Superintendent. M. Duroiselle, in the course of a visit to Arakan, the first time this interesting part of Burma has been visited by an antiquarian since the days of Forchhammer during the eighties of last century. Cut off from the rest of Burma proper by the chain of hills known as the Arakan Yoma, and tucked away, as it were, in a corner by itself, Arakan led for many centuries quite a separate existence, being periodically invaded both from Burma and from Bengal, and it, therefore, offers to the archæologist many new and stimulating problems. Its earliest history is not unnaturally a matter of conjecture. Although it is believed that its separation from Burma proper took place in the early centuries of our era, actual history appears to dawn only in the 8th century, with the building of a capital called Vesali, supposedly on the site of a much older town, in 789 A.D., according to the Arakanese chronicles themselves. Who exactly the new kings were who built Vesali, and whence they came, is uncertain, although reasons have been adduced for believing them to have been invaders from the Bengal region, a theory confirmed to some extent by the find of 8th century coins at Vesali, which bear Saivite symbols: the Nandi and the trident. But even if the kings of Vesali did profess Hindu doctrines—a fact not of course established by the finding of a few coins, especially in view of the proximity of India and the frequent relations between it and Arakan at all periods—they must have been at least very tolerant of Buddhism: and that the people themselves were Buddhist is attested by all the numerous sculptured remains which M. Duroiselle found during his stay at this centre. Part of the old palace site, M. Duroiselle reports, is now occupied by the Wethali (Vesali) village, which now counts about 80 houses only, and remnants of extensive brick walls still remain traceable within the village. On the north side are what seem to be remnants of an old moat, while outside the village fragments of the surrounding walls of the old palace are to be found here and there, but nearly on a level with the ground. Other remains of both buildings and sculptures scattered through the surrounding jungle, now the haunt of tigers and leopards, indicate the once

Burma.

wide extent of the ancient city, and bear, in M. Duroiselle's judgment, unmistakable signs of Gupta influence. Other sites in the immediate neighbourhood, which were cursorily examined, were (1) Letkhat-Taung, a large mound a few hundred feet east of the village, where several mutilated statues of a very unusual type were found, and (2) Thingyain-Taung or "Cemetery Hill," a larger and more fruitful mound, which tradition says was the burial place of the Vesali kings. The top of the hillock here is strewn with fragments of stone columns (evidently remains of some large stone building), with broken glazed tiles, and numerous small sculptures; while at a distance of about one hundred feet are the ruins of a circular chamber built of stone. Access to this latter structure is obtained by a covered corridor 2′ 2″ broad, 18′ 6″ long and 20′ high up to the highest point of the now standing walls, as the vaulted roof has collapsed along almost all its length. The diameter of the circular chamber is eleven feet and the intrados of the dome some forty feet above the base of the structure. The dome has fallen, filling in the chamber to a considerable extent, but on the stone altar, which faces the corridor aforementioned, there still rests an enormous stone Buddha, seated, which appears to be carved out of a single block. A two-line inscription in Gupta characters of about the 8th century was recovered by M. Duroiselle in the débris at the foot of this hillock, but, although seemingly complete, the epigraph has not yet been satisfactorily deciphered. Its content is likely to prove of special interest, where definite historical records are so few. Other sculptures of value were discovered in and around the village of An-baung, one of which represents the Buddhist Earth-Goddess, Vasundhari, who is depicted as wringing out her hair. This M. Duroiselle believes to be the oldest representation in Burma of this gracious goddess, who is here depicted seated instead of standing, as is usual in later periods. In addition to these sites there is the Shwedaung or "Golden Hillock," the largest ruin in the neighbourhood, which is not only thickly strewn with sculptural fragments of various sorts and sizes, but also reputed to be full of buried treasure; "which explains," as M. Duroiselle says, "why it has several times been visited by treasure-hunters who, I am told, went back somewhat poorer than they had come." Tradition connects this Shwedaung with some evidently unsuccessful Pyu invasion in the 10th century, and, even if we view with appropriate caution the local statement to the effect that here were buried the gold, jewels and other treasures of the defeated Pyu king and his army, the huge blocks of stone and the brickbats scattered promiscuously over the site sufficiently testify to its importance and to the high desirability of exploring it on systematic lines. This M. Duroiselle hopes to do in the near future.

Shortly after the defeat of this Pyu king Vesali was abandoned, in 1018 according to the books, and various capitals succeeded through the centuries until the sack of Launggiet in 1406 by the King of Burma, when the Arakanese king, Min Saw-mwan, was compelled to flee to India. Here he lived for twenty-four years in the service of Ahmad Shah, the independent King of Bengal, whose successor Nasir Shah reinstated Min Saw-mwan on the throne

of Arakan in 1430, when the capital was moved to Mrohaung or Myohaung, now only a village in the Akyab District. The reign of Min Saw-mwan after his restoration and the reigns, too, of his successors, seem to have been marked by unusual architectural activity, such fragments as are now preserved frequently showing, as might have been expected, strong Indian influence. This and certain peculiarities of design render these monuments quite different from any other known remains in Burma, and the interesting account published by M. Duroiselle in his Annual Report for 1920-21 will be welcomed by all students of archæology in this part of the East.

Indian States.

In concluding this account of the year's work of exploration, it remains to notice certain discoveries made in the Indian States of Central India. In Gwalior Mr. Garde's discoveries comprise images carved in the living rock, loose sculptures, inscriptions, temples, baolis, Sati stones, mosques and tombs, most interesting among them being the capital of a Garuda pillar found when excavating the foundations of the platform round the Kham Baba pillar at Besnagar. This capital appears to be of the same age as the Kham Baba pillar itself (namely, *circa* 150 B.C.). It consists of a cubical body 1′ 10½″ by 1′ 8½″ by 11½″, whose four sides are decorated with a stupa railing carved in relief. On the top of the abacus are carved the talons of a bird, evidently Garuda. In each talon is sunk a circular socket hole in which the legs of the figure were fixed. On one side of the abacus are seen traces of the tail of a serpent with whose folds the neck of the Garuda was presumably entwined as usual. On the bottom of the abacus is a socket hole into which fitted the tenon of the pillar shaft. The details given above leave no doubt that the abacus is the lower part of a Garuda capital. The Kham Baba pillar near which the capital was discovered is itself a Garuda-dhvaja. But the abacus, which already exists on the top of this column, precludes the possibility of the newly discovered capital having belonged to that column. The obvious conclusion therefore is that it must have belonged to some other Garuda pillar. That the site originally possessed more than one Garuda pillar had been proved previously by the discovery of a fragment of another Garuda-dhvaja in the same locality. The capital now discovered may have belonged to this latter pillar or to still a third. Be that as it may, the discovery of the present abacus throws light on the form of a Garuda capital of the Sunga period. Different scholars have made different surmises as to the form of the capital which surmounted the Kham Baba. Sir A. Cunningham supposed it to be a palm capital. Professor D. R. Bhandarkar thinks it was a human figure representing Garuda. Our capital however clearly shows from the presence of a bird's talons and the marks of the serpent on it that a Garuda capital of those days was decorated with an actual eagle's figure holding a serpent. Such a representation of Garuda is also seen in the Seshasayi group in cave No. 14 at Udayagiri (5th century A.D.).

Gwalior.

Rewa.

In the Rewa State Mr. R. D. Banerji made an extensive tour and was able to fix the dates of numerous temples in certain localities. The peculiar temple with the circular spire discovered by Beglar at Chandrehe (Plate XIX, *a*) is now known to have been erected by a Saiva Abbot named Prasantasiva.

There is a pilgrim's record on the temple itself which is dated in the year 700 K. C. S. Therefore this temple must have been erected some time before 949 A.D. The monastery adjacent to this temple, one of the two or three surviving specimens of Hindu monasteries built before the Muhammadan conquest, is still in good condition. It is partly two storied and contains a number of rooms, some of which are dormitories, others chambers for gods, the difference between them being indicated by the presence of figures of gods on the lintels of their doorways. In the right wing are four cells which were probably used by recluses who wanted to meditate without interruption. Three or four rooms on the first floor were probably used as school rooms or libraries. At Gurgi Mausun, a new temple of the circular Chedi type was discovered exactly similar to the one discovered by Beglar at Chandrehe. This temple had not been noticed by Sir Alexander Cunningham. The spire has collapsed but otherwise it is in good condition. In this case also the *garbhagriha* is circular instead of square. Gurgi possesses a mound which is conical in shape and probably artificial. According to an inscription discovered at this place, which is now preserved in the Maharaja's Palace at Rewa, Yuvarajadeva I of the Haihaya or Chedi dynasty built a very lofty temple of Siva at Gurgi. At this place numerous images were dedicated by Prasantasiva, the abbot who built the circular temple at Chandrehe. A visit which Mr. Banerji paid to the southern part of the Rewa State, specially to Amarkantak and Sohagpur, was rewarded by the discovery of several new temples which had escaped the notice of previous investigators. The best specimen among these is the great temple at Sohagpur which is in the same style as the Chandella temples of Khajuraho (Plate XIX, *b*). The temple consists of a main shrine, a mandapa and three *ardha mandapas* on three sides of the latter, two of which have collapsed. The carvings on this temple are equal, if not superior, in point of merit to those on the best temples at Khajuraho.

Indore.

At Nemawar, in the Indore State, was discovered one of the finest temples in the whole of Malwa (Plate XX, *a*), and perhaps the only one which has escaped injury at the hands of the Muhammadans. This temple appears to have been built in the 10th century A.D. as two pilgrims' records were found in the *mandapa*, which is a later construction, dated V.S. 1253 = 1196-97 A.D. and V.S. 1281 = 1223-25 A.D. This temple is called the temple of Siddhesvara and is well known throughout Malwa, worship in it being carried on by the Government of His Highness Holkar of Indore.

Narsinghpur.

While travelling from one part of Indore to another the Superintendent also visited the famous Buddhist temple of Bihar in the Narsinghpur State (Plate XX, *b*). According to tradition this temple was sixteen stories high and a light burning on the top of it could be seen as far as Mandugarh. On examination this temple proved to be the ruins of the porch and the mandapa of a Buddhist temple, the materials of which were carried away to build musjids and a tomb on the same hill. The temple is important as being a specimen of a Buddhist temple of the 11th century A.D. in the heart of Malwa. The village was called Bihar after the temple and is now entirely deserted.

Sanskrit Epigraphy.

Rao Bahadur H. Krishna Sastri having been appointed Government Epigraphist for India with effect from 1st July 1920, the editorship of the *Epigraphia Indica* was transferred to him from Dr. F. W. Thomas, London, under sanction of the Government of India, communicated with Department of Education letter No. 286, dated 21st September 1920. Moreover, the journal itself which, under an old arrangement with Sir Richard Temple, editor and proprietor of the *Indian Antiquary*, used hitherto to be published as a Supplement to the Indian Antiquary, was made an independent journal by the termination of this agreement from the 8th February 1921, and its free distribution has now been increased from 150 to 240 copies. The Government of India have also approved the proposal to issue one or two volumes of the journal from and after Volume XV under the joint editorship of Dr. Thomas and Mr. Krishna Sastri. Accordingly, Volumes XVI and XVII, which will consist for the most part of articles that have already been edited by Dr. Thomas and are in an advanced stage of proof, will be published under their joint editorship.

Mr. Krishna Sastri reports that the following parts of the *Epigraphia Indica*, *viz.*, Vol. XIII—Part VIII and Vol. XV—Parts IV, V and VI, have been edited and issued by Dr. Thomas. Besides the astronomical Tables as per the Siddhanta-Siromani, completed by Mr. R. Sewell, there are only one or two contributions of sufficient importance to require notice here. The Bezwada pillar inscription of Yuddhamalla, by Mr. J. Ramayya Pantulu, is a metrical record of about the middle of the 10th century A.D., and as such is much older than the oldest Telugu poetical work hitherto known, *viz.*, the Telugu Mahabharata of Nannaya-Bhatta dating from the 11th century A.D. The characters of this new record are to be compared with those of the Indrakila Hill inscription from Bezwada published opposite page 98 of the Director-General's Archæological Survey Report for 1915-16, which are there attributed to about the end of the 9th century A.D. Still another stone record palæographically of the same type and also coming from Bezwada was noticed in the Epigraphical Report for 1917-18, page 131, this being dated in the 17th year of Vishnuvardhana, son of Vikramaditya I, which corresponds roughly to A.D. 909. So the assignment of the Yuddhamalla inscription to the middle of the 10th century A.D. on the strength of its palæography, appears to be safe and reasonable. The existence of this early metrical record in Telugu leads Mr. R. Pantulu to suggest that the Telugu language, even at this remote period, had attained a high state of development and was almost standardised in its grammar and prosody, and that consequently the absence of Telugu books prior to the time of Nannaya-Bhatta of the 11th century A.D. does not preclude one from inferring that there must have been, as in Kanarese, a Jain period of Telugu literature prior to the 11th century A.D. whose productions are now lost to the country for reasons yet to be discovered. The two Omgodu Pallava copper-plate grants published by H. Krishna Sastri are of historical interest, inasmuch as the first of them is the earliest of its kind hitherto brought to light. Its date would appear to be about the 5th century A.D., while the

second grant, on account of its later type of character, may be a copy of a grant of the 5th-6th century A.D. put into writing in the 7th century. Some unpublished Amaravatī inscriptions studied by Ramaprasad Chanda from the view point of palæography and sculpture, conclusively prove that the Mahachaitya at Dhannakada has a story to tell us in its inscriptions of the successive stages of its growth from the 2nd century B.C. to the 3rd century A.D. The close affinity of the Prakrit language used in these inscriptions to the Paisachi Prakrit of the Grammarians shows that the latter was cultivated in the kingdom of the Andhrabhritya kings.

No epigraphical acquisitions are reported to have been made during the year by the Indian Museum, Calcutta, and the Provincial Museum, Lucknow. The Superintendent of the Rajputana Museum, Ajmer, copied 11 inscriptions. One of these, written on the back of a broken statue, was discovered near lake Nasun in the Kharwar State, Ajmer District, and was secured as a present to the Museum from the Thakur Sahib of that State. It is dated in Samvat 887 (A.D. 850) and records the dedication of an image of Siva called Nilalohita by a certain Gavundaswami. No trace remains of either the temple of Siva or the image within it, but says Mr. Ojha, "the statue in question is undoubtedly that of the donor Gavundasvami." A certain Isanabhata, son of Dhanika, who is said to have been the local ruler at the time of the record, may have been a subordinate of the Imperial Pratiharas. It may be noted that in the Chatsu inscription of the Guhilot king Baladitya (*Epigraphia Indica*, Vol. XII, pp. 10 ff.) the names Isanabhata and Dhanika occur as those of great-grandfather and great-grandson. A stone record of importance for the history of the Chahamanas of Ranthambhor was also secured from the Kota State. In this, Prithviraja, Vagbhata (Bahada), Jaitrasimha and Hammira are chronologically mentioned, with the distinguishing events of their reigns, as also the family of Hammira's minister Narapati. Hammira himself is described as having defeated a certain Arjuna in battle, wrested the glory of Malwa by force and then erected at Ranthambhor a three-storied golden palace name Pushpaka. This last, it has been suggested, may be identical with the present State Palace of Jaipur at Ranthambhor. A still more interesting discovery, however, is a short record on the perforated stone window in the second storey of the so-called *Kirtistambha* of Rana Kumbha at Chitor. It refers to the obeisance offered to the god Samadhisvara by the architect Jaita and his two sons Napa and Punja. On the fifth storey of the Kirtistambha the effigies of the same architect and his three sons Napa, Punja and Pama are represented. Mr. Ojha, judging from the dates of the two records, reasonably assumes that this tower of seven storeys must have taken eight years to build, commencing with A.D. 1440, and concludes that it could not be a tower of victory, as supposed by some, erected to commemorate the victory of Rana Kumbha over the combined armies of Sultan Mahmud Khiliji of Malwa and Sultan Kutubuddin of Gujrat, which events actually took place long after the completion of the tower in A.D. 1449, but a Kirtistambha, a tower of fame, erected in commemoration of the building of a temple, in this case of the Vishnu temple of Kumbhasvami, which is close

to this "pillar of fame" and was finished and consecrated also in A.D. 1449. Still another inscription copied at Chitor reveals the name of the sculptor Balraja, a fourth son of Jaita, builder of the Kirtistambha.

Of the fifteen inscriptions copied in the Central Circle, one is the important copper-plate from Nalanda described on page 27 above. Two other Pala inscriptions mentioning Devapala and Mahendrapala were found, respectively, on a metallic image of Samkarshana excavated at Nalanda, and on a stone image of Tara at Itkhori. Several interesting seals were also excavated at Nalanda. One of these, a large plaque with the seal of Harshavardhana, has palæographically been assigned to the 7th century A.D.

In the Northern Circle, epigraphical work consisted mostly in the study of the unpublished inscriptions of the Archæological Museum at Muttra. A new inscription of Kanishka's reign dated in the Kushana year 23, the first month of the summer season, read with the Mathura Yupa inscription of Vasishka dated in the year 24, the fourth month of the same season, further shortens the interval hitherto known to exist between these two kings, who came to the throne one after another. On another pedestal where the image is missing, is found an inscription of 2 lines written between the feet. The first word of this, which was read *mahahinayanasya* by Dr. Vogel, is now read by Rai Bahadur Daya Ram Sahni as *mahadandanayakasya*, a fact which proves once more the tentative nature of the decipherment of early inscriptions, even where they are done under the most favourable of circumstances. From this new interpretation Mr. Sahni concludes that "side by side with statues of royal personages statues were also raised to important officers of State." But this conclusion does not appear necessarily to follow from the mere name *mahadandanayaka* appearing at the beginning of the inscription. A copper-plate record of the Kanauj king Govindachandra recently dug up at Chhatarpur (district Cawnpore), forms the subject of a contribution to the *Epigraphia Indica* by Mr. Daya Ram Sahni.

In Bengal and Assam were discovered during the period under review one of the missing plates of Bhaskaravarman published in Volume XII of the *Epigraphia Indica*, and two fragmentary stone records of about the 12th or 13th century, and also a curious inscription in stucco (?) on bricks panelled on the north wall of an ancient Hindu temple at Rainagore, district Jessore. This last belongs to the end of the 16th century A.D. and is written in the Sanskrit language and the Bengali script. A few other Arabic inscriptions hitherto unpublished, of the period of the Bengal Sultans, were also secured and despatched to the Epigraphist for Moslem inscriptions for publication in the *Epigraphia Moslemica*.

In the Southern Circle, 341 villages were visited and 675 new stone inscriptions and 16 copper-plate records secured. Besides which, the photographer of the Madras Epigraphist's office took 49 photographs and prepared five pen and ink sketches. Among these sketches is a copy of a coloured picture preserved in the Siva Temple at Mukhalingam representing the Sakta goddess Chhinnamasta, on which the veteran scholar of Sakta literature, Sir John Woodroffe has furnished a very interesting and informing note.

One of the copper-plate inscriptions examined in the Southern Circle belongs to the reign of the Eastern Ganga king Anantavarman, and records the gift of a village to a resident of the Agrahara Srangatika in the Kamarupa-vishaya. It is interesting to learn that from distant Assam there were at this period emigrant Brahmanas coming to receive grants of villages in Utkal. Another copper-plate, a Sailodbhava record of Dharmaraja *alias* Manabhita, is dated in Samvat 800, and refers to a battle fought at Phasika, wherein the king is stated to have defeated a certain Madhava.

Some stone records of Parthivendravarman, a hitherto unidentified southern king contemporary with the Chola Aditya Karikala II, and like him bearing the title "who took the head of Vira-Pandya," were copied during the year under review. Mr. Venkoba Rao attempts to identify this king with the Ganga, Prithivipati II Hastimalla, who was a feudatory of Parantaka I and received from him the title "Lord of the Banas." This he has been led to do mainly on the ground that the existence of Parthivendra's inscriptions is solely confined to the North Arcot, Chingleput, and South Arcot districts, which, as he says, comprised the territorial division of the Banas called Vanagappadi, and that about this period there was no king in that region other than the Ganga chief Prithivipati II whose name Prithivipati (Piridipati) is practically synonymous with Parthivendra. Mr. Krishna Sastri holds, however, that for two important reasons, this suggestion, admittedly tentative, is untenable. In the first place Vanagappadi or Perumbanappadi, strictly defined, did not apply to *all* the districts where Parthivendra's inscriptions are found, nor do the many published records of this king prove his Ganga origin by the mention of conspicuous titles peculiar to that family or otherwise. Nor do the various forms of Parthivendra's name, *viz.*, Parthma Maharaja, Raja-maharayar, Parthivendra Adityavarman, Parakesari Vendradivarman indicate any Ganga connection. On the other hand, we clearly see from the last two variants, his possible Chola origin, or at least his intimate connection with the Chola kings. So, till better evidence is forthcoming, the identification of Parthivendravarman has necessarily to be postponed. Another suggestion for which there is no warrantable evidence is the identification of Udaiyapirattiyar Viman Kundavaiyar, queen of Arinjaya, as an Eastern Chalukya princess and a daughter of Chalukya Bhima II. Kundavai is a name known for the first time only from the Chola family, and it is extremely doubtful if such a name ever existed among the Eastern Chalukyas prior to the time of the Chola princess Kundavai's espousal with the Eastern Chalukya king Vimaladitya. The first six verses of the *Surya-sataka* or *Mayura-sataka* of the poet Mayurakavi, engraved on a pillar of the Kachchesvara temple at Conjeeveram, are palæographically assigned to the 11th century A.D. about the time of the Chola king Kulottunga I, who we know was in some sort of relationship with the Gahadavala kings of Kanuaj (*vide* Epigraphical Report for 1908, p. 65f). If we remember that these Gahadavalas were sun-worshippers, we might in a way account for the insertion of these first six verses of the *Surya-sataka* in the Kachchesvara temple, where, according to Mr. Venkoba Rao, a Sunshrine also exists. The famous Telugu poet Allasani Peddana of the 16th

century is mentioned as a donee in a record of the Vijayanagara king Krishnaraya his patron, at Melpadi in the North Arcot district. His father's name is here given as Chokkarasa and his native village, Nandapuri.

Of the five inscriptions found by Mr. R. D. Banerji in front of the Maharaja's palace in the town of Rewa, two are said by him to relate to the Saiva ascetics of the Mattamayura family located at Chandrehe and incidentally to supply some interesting information about the Chedi rulers of Dahala. Yuvarajadeva I, son of Mugdhatunga, is stated to have been the first to bring the ascetic Prabhava-siva to his country. The preceptor of this Prabhava-siva was Chuda-siva, while his disciple was Prasanta-siva; and next after him came Prabodha-siva. The Chandrehe record, which was supposed to be lost since Cunningham noticed it half a century ago, was among the five inscriptions referred to. It is incised on two slabs of stone built into the walls of the front verandah of the Saiva monastery at Chandrehe, close to the great temple of Siva at that place built in A.D. 973 by the Saiva teacher Probodha-siva, and which till now was the only temple of the Chedi type known to students of Indian Architecture. The record supplies the name of the early teacher Purandara of the Mattamayura family, the preceptor of Sikha-siva (identical with Chuda-siva of the first inscription), and mentions after him the teachers Prabhava-siva, Prasanta-siva and Prabodha-siva in order. Of the remaining records described by Mr. Banerji one is Buddhist and registers the construction of a tank by a chief named Malayasimha at a cost of 1,500 *tankas*. It is dated 1193 A.D. during the reign of Vijayasimhadeva, the last known king of the Chedi dynasty of Dahala. Still another is a record of king Karna of the same dynasty, which supplies us with the names of one or two battles fought by that redoutable warrior; and the date given both in the years of the Chedi Era and in regnal years makes the record particularly interesting and important, inasmuch as it indicates that the first year of Karna should now be fixed at A.D. 1052-53. But from his Benares plates we know that Karna had performed the annual ceremony of his father Gangeyadeva on the date of that grant, *i.e.*, in A.D. 1042. Consequently it looks as if for about 10 years after succeeding to the throne on the death of his father, Karna was either in mourning or was eclisped by enemy aggression and that it was only in 1052-53 that he performed his actual coronation (*abhisheka*) and took up seriously the reins of Government (*Karna-prakasa-vyavaharana-kala*). This is perhaps what is also hinted at in the introductory verses to the metaphysical drama Prabodhachandrodaya of Krishna-misra, where it is stated that after serious battles and a period of dejection king Karna came out victorious and obtained that necessary peace of mind which was required to witness a play. Other inscriptions copied and examined by Mr. Banerji were a copper-plate of the Paramara king, Naravarman, dated in A.D. 1110-11, two pilgrim's records and an inscribed image of the 12th century A.D., representing a private individual, and two votive records from Bisalpur (Jaipur State) of about the same period, one of which mentions the Chahamana chief Prithviraja II.

Among the old guns at Rewa, the one which was brought from the Maharaja's Palace, Allahabad, has been made out to be one of the oldest in India, having been cast by the well-known artisan Saiyad Ahmad of Roum or Constantinople during the reign of the emperor Sher Shah. Similar guns have also been discovered in East Bengal and Assam. On the Rewa gun are inscribed not only the usual Persian couplet and a Persian inscription in prose but also three lines in Sanskrit. These last state that in A.D. 1702, this gun was obtained by the illustrious Maharajadhiraja Rudrasimha of the Ahom dynasty of Assam after defeating the king of the Hidimba country, *i.e.*, the modern Cachar. "Very probably," says Mr. Banerji, "it was captured by the Mughals during their long wars with the Ahom kings of Assam during the reigns of Shahjehan and Aurangzeb and brought to Allahabad."

Epigraphy. Burma.

From Burma, M. Duroiselle reports that Part II of Volume I of the *Epigraphia Birmanica* was issued during year and that final proofs of Parts I and II of Volume II of the same publication together with that of the "List of Inscriptions found in Burma, Part II," were read and passed.

Part II of Volume I of the *Epigraphia Birmanica* contains Nos. I—VIII of the earliest inscriptions in Talaing by Mr. C. O. Blagden, and Parts I and II of Volume II contain the short legends on the Talaing plaques on the Ananda Temple, Pagan, together with 87 plates of illustrations of the plaques themselves by Monsieur Duroiselle. They comprise the earliest Talaing records that have yet been discovered in Burma, and it is needless to say that the sidelights which they have thrown on the political and religious history of Burma of the earliest period are of great value. "The chief point of interest in this collection of records," says Mr. Blagden in his preface to Volume I. Part II, "is the language in which they are written. In that respect their value is beyond price. Mon is a member of a fairly large but much broken down scattered family of languages, which extends (in detached fragments) from the extreme west of the Central Provinces of India through Assam and Indo-China right down into the Malay-Peninsula. The family is of the highest linguistic interest, being very peculiar and characteristic in its structure, and apparently constitutes a series of links in a broken chain that formerly connected the still more extensive and important Malayo-Polynesian (or Austronesian) family with its original Asiatic home. Further, be it remembered that of all the languages of the scattered Austroasiatic family (as it has been styled) only one other besides Mon, namely Khmer (or Cambojan), possesses literary records going back beyond the most recent times. All the rest are known only in their modern forms. When these facts are borne in mind, it will be realized how important these Mon records are, especially the older ones. From them alone can we form anything like an adequate picture of the language in its earlier phases, when its structure was still relatively unimpaired and perspicuous: for here, too, as is so often the case in the history of languages, the process of change, both phonetic and morphological, has been mainly in the direction of decay; there has been a progressive breaking down and obliteration of distinctive features."

Thirteen new inscriptions were found in Burma during the year. Of these eleven are in Burmese and record the dedication of land to a Pagoda or Monastery, or the erection of a monastery and the dedication of land to it, or the offering of cooked rice and oil lights to a pagoda, etc. Historically they are not important, and the earliest of them is dated 1311 A.D. The other two—one a short inscription of two lines in Gupta character and the other a long one in Devanagari—have been sent to the Government Epigraphist in India for decipherment and translation. The longer inscription, which was found inscribed on three faces of a stone pillar on the platform of the Shittaung Temple at Mrohaung in the Akyab District, was noticed by Dr. Forchhammer in his Notes on Arakan, but unfortunately no step had ever been taken to have it deciphered and translated. The shorter inscription in two lines in Gupta character was found at Vesali, which is situated about 8 miles to the north-west of Mrohaung. It can at least claim an antiquity as early as the 8th century A.D. Should these two inscriptions prove to contain historical facts, they will be of great value for the history of ancient Arakan, which is much enshrouded in myth. The Government Epigraphist has been asked to decipher them and translate them with a view to having them published in some future issue of the *Epigraphia Birmanica*.

Moslem Epigraphy.

Of new Moslemic inscriptions Mr. Yazdani reports that about forty have been copied, some of them interesting from an historical point of view. For example, one inscription found at the Elgandal Fort (Karimnagar District) mentions the name of Rae Bindraban, a historian of Aurangzib's reign, whose work although not published yet, is of considerable importance for the history of that period. Rae Bindraban served as a writer to Aurangzib, but at the time the inscription was engraved he seems to have held the post of Governor at the Elgandal Fort. It was an important outpost on the North-East Frontier of the Qutb Shahi kingdom and had often been a bone of contention between them and the Zamindars of Telingana. The selection of a Hindu Governor for such a place indicates the characteristic shrewdness and sagacity of Aurangzib.

Two other inscriptions, belonging to the reign of Muhammad Tughlaq, are important as being among the earliest Moslem epigraphs in the Deccan. One of them was found at the Qandhar Fort in the Nanded District, and the other at the Bodhan Mosque, 16 miles from Nizamabad. The history of Tughlaq's conquests in the Deccan is known only in the barest outline, so that every new record which throws light on the expeditions which he led there, is of value.

In last year's report a reference was made to the discovery of certain Nizam Shahi inscriptions at the Antur Fort, Aurangabad District. One of the inscriptions establishes the reign of a new king, Burhan Nizam Shah III, between the reigns of Murtaza Nizam Shah II and Husain Nizam Shah—1610-30 A.D. Colonel T. W. Haig, whose lists of the dynasties of the Deccan are by far the most reliable and complete, has omitted the name of this king.

Only one number of the *Epigraphia Indo-Moslemica* was published during the year. Another is in the press which, it is hoped, will be published simultaneously with this report. The ensuing number contains an interesting article

by Maulavi Zafar Hasan on the inscriptions of Sikandar Shah Lodi, one of which was recently discovered near Hauz Khass, Delhi, by Sir Henry Sharp.

Archæological Chemist.

The Archæological Chemist, Mr. Sana Ullah, worked for about 5½ months at Calcutta, continuing the preservation of the antiquities in the Indian Museum, for which he had been specially deputed there immediately after his return from England in the middle of 1917. The total number of various objects treated by him this year are detailed as below:—

Terracotta	152
Stone	18
Clay	2
Copper and bronze	70
Iron	38
Silver	2
Lead	7
Bone and ivory	4
Wood	47
Textiles	520
Miscellaneous	41
TOTAL	901

For the rest of the year Mr. Sana Ullah was engaged in helping Professor Cecconi, the Italian expert, in preserving the painting at Ajanta, and was also deputed to visit the museums at Madras, Patna and Lahore to advise the Curators regarding the treatment of several different classes of antiquities. In Lahore, a valuable collection of textiles, some 500 in number, which was being destroyed by pest was successfully treated and saved with the help of hydrocyanic acid gas.

Ancient Monuments Act.

Hitherto, the task of notifying ancient monuments as protected under the Ancient Monuments Act, and the duty also of providing funds for their conservation have devolved upon the Local Governments, but with the transfer, under the Reforms Scheme, of financial responsibility to the Central Government, means obviously had to be found for enabling the Central Government, if not to control the statutory protection of monuments, at least to limit its own obligations. Accordingly, while it was ruled by the Reforms Act, that monuments, when protected, should *ipso facto* pass into the charge of the Central Government, it was also provided that the Governor General could by notification in the Gazette exclude particular monuments from the operation of this rule. As a result of these provisions, the Local Governments, on the one hand, have been hastening to apply the Act to a large number of monuments which for one reason or another had not previously been protected; and, on the other hand, the Director General has been overhauling and rigidly revising the lists of these protected monuments and rejecting on behalf of the Central Government any which were not deemed to be of real national importance, or for the preservation and maintenance of which expert archæological advice was not required. This work is still in progress, and it will probably be another twelve months, before any degree of finality is reached.

In Burma owing to some misapprehension in the public mind as to the meaning of the word "protection" in regard to ancient monument, serious difficulties have long been experienced in the application of the Ancient Monuments Preservation Act to religious edifices. It is particularly unfortunate that this misapprehension should exist, because there is no Province of India in which the public seem more devoted to their monuments and more anxious for their preservation, and it is only through the instrumentality of the Act that Government can under the law afford the assistance it desires to. As all efforts to explain the position had failed and the public persisted in their mistaken idea that protection involved some measure of interference on the part of Government, it was reluctantly decided to abrogate the notifications of protection which had previously been issued and the same were withdrawn in General Department Notification No. 279, dated the 21st September 1915. The promulgation of the new law restricting the work of the Department to protected monuments only would thus create a situation of some difficulty, if it were to be applied to Burma.

With a limited number of monuments to look after, and its responsibilities towards them more clearly defined, the Archæological Department will henceforth be saved much of that dissipation of energy which was inseparable from the old arrangement, and will be able to organize its work on more methodical and efficient lines.

Listing of Monuments.

At the same time it will be spared much of the labour previously bestowed on the listing of monuments. Hitherto these lists have had to include each and every ancient monument in a Province, however insignificant and valueless it might be. But for the future they will be restricted to the two or three thousand buildings in charge of the Department, and while their bulk can thus be vastly reduced, their quality can be proportionately improved. Meanwhile, with the printing of the fourth and last volume, which was sent to press during the year, the lists for the Delhi Province, compiled on the old system, have now been brought to completion. This fourth volume contains the monuments of (1) Badarpur, (2) Badi, (3) Nangloi, (4) Bawana, (5) Kanjhaola, (6) Najafgarh, (7) Palam and (8) Shahdera Zails. Inasmuch as its three companion volumes were already in print, and the manuscript of the fourth practically finished before the introduction of the Reforms Scheme it was obviously undesirable to interfere with the plan of the work at the last moment. In the Central Circle, on the other hand, the lists are still far from being complete, and it has therefore been decided to modify the instructions upon which the local officers there had previously been working, so as to eliminate from their lists whatever monuments have been taken out of our charge. In the course of the year Pandit Hirananda Shastri made a personal inspection of all the chief monuments in the Muzaffarpore District and a few in the Champaran, and drafted descriptive notes on the same. It is hoped that the new list for this Province, which for one reason or another has been so long delayed, will now be brought to completion and issued at an early date.

Treasure Trove.

In the Western Circle, the Bombay Branch of the Royal Asiatic Society had 2,240 coins under examination at the close of 1920 and received a further

2,921 for examination in 1921. Of the latter one gold coin was received from Bijapur, 2,032 copper from Igatpuri, 7 gold from Ratnagiri, 774 gold from Dharwar and 107 from Dhulia. Out of these 1,155 were distributed to the various museums and 3,854 coins were still awaiting examination at the close of the period under report.

Finds made in other parts of India were of less account. In the Madras Presidency 5 cases of treasure trove were reported from the Tanjore District, one from Ramnad and one from the North Arcot District, but these were all finds of metal images or antiquities other than coins and, with one exception, which was of little or no value were acquired for the Madras Museum. In the Central Circle, two finds of 17 and 3 coins respectively were made in the Champaran District, and 18 of these comprising issues of Shah Jehan, Shah Alam II and Alamgir II were distributed to various museums. The hoard of 529 coins discovered in the previous year at Parsundi in the Birbhum District proved to consist mainly of issues of Shah Jehan containing specimens from no fewer than 21 out of the 35 known mints of this monarch. 321 out of the 529 were rejected as being either too common or too worn for museum purposes, and the remainder were distributed to the Delhi, Lahore and Indian Museums.

In the Frontier Circle, no finds were reported, although in a country so rich in antiquarian remains it is obvious that treasure must frequently come to light which is not brought to notice. Accordingly, the Superintendent in Peshawar is making an effort to advertise the actual provisions of the Treasure Trove Act so as to bring it home to the people how much more advantageous it is to them to notify treasure than to dispose of it to the local goldsmith, but it would be unwise to be sanguine of the result of even a sustained effort in this direction, as the people have a deep seated and perhaps ineradicable suspicion of the authorities in regard to matters of this kind.

Tours. The tours of the Archæological Superintendents are chronicled in their respective reports and need not be mentioned here. My own movements embraced visits to Taxila, Agra, Delhi, Calcutta, Madras, Bijapur and Bombay. I was at Taxila for nearly 9 weeks in order to supervise the conservation and excavation works in progress there. Dr. Spooner's movements as Deputy Director General of Archæology were confined to Agra, Patna, Nalanda, Muttra and Taxila.

Publications. The following publications were issued during the year :—

1. Annual Report of the Director General of Archæology in India for the year 1918-19.
2. Memoirs of the Archæological Department Nos. 7-12.
3. Annual Reports of the Southern, Western, Eastern, Northern, Frontier and Burma Circles as well as the Report of the Assistant Superintendent for Epigraphy, Southern Circle, for the year 1919-20.
4. Epigraphia Indica, Volume XV, Parts V, VI, and VII.
5. Catalogue of the Photo-negatives in the office of the Director General of Archæology in India.

6. Epigraphia Birmanica, Volume I, Part II, Volume II, Parts I and II.
7. Tile-Mosaics of the Lahore Fort, by Dr. Vogel.
8. Epigraphia Indo-Moslemica 1917-18.

357 volumes, including periodicals, were received in the Central Library. Of these 81 were received as presents and 30 in exchange, while 246 were purchased. Library.

A list of the photo-negatives prepared in the Director General's office during the year is published as Appendix D to this Report. Photographs.

At the joint invitation of the Government of India and His Exalted Highness the Nizam's Government Mon. A. Foucher came out to India for certain special work, chiefly at Ajanta. He was afterwards appointed by the Government of India additional officer of the Archæological Department in the Frontier Province for one year, taking over charge on the 1st April 1920, for research work. Consequent on the permanent transfer of Professor D. R. Bhandarkar to the Calcutta University in January 1921, Mon. Foucher held charge of the Archæological Section of the Indian Museum, Calcutta, until such time as a permanent Superintendent could be appointed for that section. In the Central Circle (old Eastern Circle) Pt. V. Natesa Aiyar was granted combined leave on Medical Certificate from 5th March 1921, and Pt. Hirananda Shastri, Officiating Assistant Superintendent, was appointed in his place as Officiating Superintendent of that circle. Mr. M. Hamid Kuraishi was appointed to officiate as Assistant Superintendent in his stead. In the newly created Eastern Circle, Mr. K. N. Dikshit was appointed Officiating Superintendent, with headquarters at Calcutta. Personnel.

Mr. J. F. Blakiston, Superintendent, Muhammadan and British Monuments, Northern Circle, proceeded on long leave in October 1920, Mr. J. A. Page being appointed to officiate for him. On the former's return from leave he resumed charge of the office at Agra. Mr. J. A. Page was granted leave from April 9th to October 1920.

The Sanskrit scholarship awarded to Mr. Madho Sarup Vats, M.A., in March 1920 was extended for a period of one year. The scholarship for Persian and Arabic Inscriptions was, under special orders of the Government of India, awarded to Mr. Ram Singh Aujha for training in Archæological Chemistry under the Archæological Chemist in India. Mr. J. F. Seervai resigned his architectural scholarship. Scholarships.

JOHN MARSHALL,

Director-General of Archæology.

APPENDIX A.

Copy of the letter No. 22-5177, dated the 28th March 1922, from Sir Cecil Smith, Victoria and Albert Museum, London, to the Director-General of Archæology in India.

I expect you are wondering what we have been doing with the specimen of porcelain or stone which you sent us in June last. I submitted it to the Professors at the Imperial College of Science, and have only now got their reports back, I am sending you copies herewith. Professor Baker says in his covering letter :—

"*It is an extremely difficult thing to explain, though I feel fairly clear in my own mind that my idea of its origin is correct.*"

"You will think that I have been very slow, but my attempt to imitate it artificially took three months."

I may say that Professor Baker's report only confirms the report which I had already had from Stanley Clarke, the head of the Indian Museum, who, as you probably know, has himself considerable knowledge of chemistry.

I have also shown the specimen to Rackham. He is even more puzzled by it. His view is that the character of the turning (it has evidently been turned on a lathe) makes it very difficult to understand how it can possibly be of the date suggested. I suppose your evidence goes to show quite certainly that it belongs to the period of the other finds at Taxila ? Of course you know as well as I do the mysterious way in which objects of later date sometimes find their way into old sites, as witness, the Chinese snuff-bottles, which were so long regarded as having been found under circumstances pointing to a pre-Christian date.

I am returning the specimen to you herewith, as you requested, but in view of the rarity and the interest of these and the material, we should be very grateful to you if you could possibly spare even the smallest specimens :—

(1) for the Department of Ceramics in this Museum ; and (2) for the Natural History Museum.

COPY.

IMPERIAL COLLEGE OF SCIENCE AND TECHNOLOGY.

(ROYAL COLLEGE OF SCIENCE.)

South Kensington,
London, S.W. 7.

Piece of Porcelain-like plate from India.

Analysis.

Air dried sample—

	Per cent.
Silica	98·40
Ferric oxide and Alumina	·50
Lime	·12
Magnesia	·07

This corresponds very closely to an analysis of natural quartz. As will be seen by the attached report from the Geology Department, the microscopic examination points to the same conclusion, but no single specimen of quartz has been found in the natural state which has the peculiar arrangements of crystals.

I made an attempt to reproduce the substance by heating quartz for three months in an electric furnace to about the highest temperature of a furnace which would be available in early times. This gave an opalescent material, which, however, was not identical microscopically with the sample submitted.

The quartz could not have been fused as Mr. Brammall has suggested, since the plate has a specific gravity of 2·64 (identical with natural quartz) compared with 2·38, the specific gravity of melted quartz. A fragment on fusion in the oxy-hydrogen flame first splits, like ordinary quartz, and then fuses.

My own opinion, for what it is worth, is that this is a natural product (extremely rare since no similar substance has been found by geologists) produced, possibly in a volcanic region, by long continued heating of ordinary quartz.

H. B. BAKER.

COPY.

REPORT ON SPECIMENS SUBMITTED BY PROFESSOR BAKER. BY A. BRAMMALL.

The sample consists of a glassy, apparently opaline matrix, packed with minute granules of crystallised silica (quartz) showing a curious property; though granular the crystals are orientated in parallel positions crystallo-graphically, *i.e.*, their vertical axes are (mainly) normal to the flat sides of the specimen.

Their orientation would be difficult indeed to account for, if we assume that the specimen is a planed-down slab from a rough rock mass; for such a rock, hypothetical conditions likely to have determined a parallel 'lie' for the crystals can not be framed—whether the rock was originally (*a*) wholly glassy, opaline, and of thermoaqueous origin, or (*b*) wholly glassy, due to rapid chilling from a state of fusion.

It is less difficult to conceive that the plate may have been obtained by fusing highly siliceous material, and be retarding cooling during contact of a fused cake with some plane surface. There is, I believe, a very thin selvage, which however is not entirely glassy.

There exists experimental evidence to show that an opaline slab devitrified under similar conditions would produce such a remarkably uniform lie of crystal grains developed by heat.

Certain minute plumose, and roughly spherulitic crustal structures—scanty enough—are suggestive of devitrification.

Analysis for water content —

(*a*) below 110 degrees,

(*b*) between 110—300,

(*c*) above 300 degrees,

would probably help towards determining the origin.

A. BRAMMALL.

APPENDIX B.

Special grants-in-aid.—The following allotments were made out of the special grant of one lakh provided by the Government of India.

	Rs.
Deputy Director-General's salary	9,600
Do. do. local allowance	3,000
Do. do. travelling allowance	2,000
Do. do. contingencies	1,000
Mon. A. Foucher's salary	12,000
Exploration at Taxila	10,000
Archæological Library at Simla	3,000
Bakshali Manuscript	3,400
Carried over	44,000

	Rs.
Brought forward .	44,000
Sanchi Monograph	4,000
Mr. B. L. Dhama's salary	1,308
United Provinces	5,000
Burma	5,000
Punjab	12,500
North-West Frontier Province	3,000
Bombay	10,000
Bihar and Orissa	5,000
Delhi	6,192
Water supply, Delhi	855
Total .	96,855

APPENDIX C.

Expenditure on the Archæological Department for the year 1920-21.

		Rs.
Southern Circle	Archæology	21,255
	Epigraphy	31,054
Western Circle		72,918
Eastern Circle		16,780
Central Circle		39,626
Northern Circle	Superintendent, Hindu and Buddhist Monuments .	19,288
	" Muhammadan and British Monuments	26,517
Frontier Circle		20,889
Burma Circle		27,537
Director-General of Archæology including Government Epigraphist and the Government Epigraphist for Moslem Inscriptions . . .		1,25,690
Total .		4,01,554

Expenditure on conservation, etc., including grants-in-aid from Imperial Revenues—

		Rs.
Madras		38,146
Bombay		94,829
Central India (Dhar State)		4,237
Ajmer		967
Bengal (E. C.)	Assam	4,427
	Bengal	12,457
Bihar and Orissa	Bihar and Orissa	12,665
	Central Provinces	11,768
Punjab	Hindu and Buddhist Monuments	14,558
	Muhammadan and British Monuments	90,065
Carried over .		2,53,692

		Rs.
	Brought forward	2,53,999
United Provinces	Hindu and Buddhist Monuments	2,094
	Muhammadan and British Monuments	1,22,932
Delhi		72,620
Burma		53,120
North-West Frontier Province		13,123
Taxila		22,500
	Total	5,40,388

	Rs.
Special charges—	
Deputy Director-General's salary	9,600
Do. do. local allowance, T. A., and contingencies	6,000
B. L. Dhama's salary	1,308
Antiquities	4,136
Library	7,267
Mon. Foucher's salary	12,677
Epigraphia Indica and Epigraphia Indo-Moslemica	4,244
Honorarium for editing the Epigraphia Indica	1,000
Other Archæological publications	4,800
Director-General's Report	4,608
Total	55,640

APPENDIX D.

Drawings and photographs prepared by the Department.

		Drawings.	Photographs.
Southern Circle	Archæology	9	123
	Epigraphy	5	49
Western Circle		19	403
Eastern Circle		15	148
Central Circle		2	135
Northern Circle	Superintendent, Muhammadan and British Monuments	27	132
	Do. Hindu and Buddhist Monuments	21	172
Frontier Circle		9	89
Burma Circle		7	109
Director-General of Archæology		5	132
	Total	119	1,492

APPENDIX E.

List of negatives prepared by the office of the Director-General of Archaeology in India, during the year 1920-21.

No.	Place and District.	Description.	Size.
	Frontier Province.		
1	Jaulian . .	Lately damaged figure of Buddha	6½"×8½"
2	" . .	" " " "	"
	Taxila—Punjab.		
3	Bhir Mound . .	View from South-East	"
4	" . .	" " South	"
5	" . .	" " South-West	"
6	" . .	" " North	"
7	" . .	" " South	"
8	" . .	" " East	"
9	" . .	*Antiquities—* A. 1055 Chalcedony pendant ; . . . . B. 596 Stone head of ram ; C. 1198 Gold pendant ; D. 1363 Terra-cotta mould ; E. 320 Chalcedony seal ; F. 598 Clay seal.	"
10	" . .	*Antiquities—* A. 1134, Agate pendant ; . . . . . B. 973, " " C. 1134, " " D. 883, " " bead ; E. 1354, Cornelian bead ; F. 975, Agate bead ; G. 1132, Cornelian ear-ring ;	"

APPENDIX E—*contd.*

No.	Place and District.	Description.	Size.
	Taxila—Punjab —contd.	*Antiquities*—contd. H. 887, Agate bead; I. Cornelian pendant; J. 1124, Cornelian bead; K. 1205, Agate pendant; L. 886, Agate bead; M. 1205, Agate pendant.	
11	Bhir Mound . .	*Bone objects*— A. 1247, B. 1596, C. 905, D. 809	$6\frac{1}{2}'' \times 8\frac{1}{2}''$
12	,, . .	*Metal objects*— A/176 Copper trident; . . . . . . B/1186 Iron knife; C/1374 Copper wheel; D/503 Iron arrow-head.	,,
13	,, . .	*Metal objects*— A/505 Iron spear head; . . . . . B/892 Iron pick; C/1412 Iron adze.	,,
14	,, . .	*Potteries*— A/781 Earthen ghara; . . . . . . B/659 ,, vase.	,,
15	,, . .	*Pottery*— 744, Earthen *coole* with one spout	,,
16	,, . .	A/1004 Earthen vase; . . . . . . B/904 ,, kuza.	,,
17	,, . .	*Pottery*— 781, Earthen ghara	,,
18	,, . .	A/659, b/579 Earthen ghara and lota	,,
19	,, . .	a/1091, b/1386, c/1407 Earthen vase and tumblers .	,,

APPENDIX E—*contd.*

No.	Place and District.	Description.	Size
	Taxila—Punjab —contd.		
20	Bhir Mound . .	*Pottery*—contd. a/1582, b/914	$6\frac{1}{2}'' \times 8\frac{1}{2}''$
21	" . .	1176, Earthen cup with lamps	..
22	" . .	a/571, b/1081, c/283 Earthen cups	..
23	" . .	550 Terracotta handle of vase	..
24	" . .	3a. Earthen stopper 259-3b; . . . . . Earthen plaque 1014, 3c.; " " 214.	..
25	" . .	A/G. 95, Terracotta torso with armour; . . b/1157 Terracotta torso of a figure; c/1453 Terracotta torso of a figure.	..
26	Hathial Mahal .	View from the North	..
27	" .	Group of copper vessels in trench	"
28	" .	" " " " " "	"
29	" .	a/*9110* Copper goblet, b/*9117* Copper goblet . .	"
30	" .	a/*9119* Copper goblet, b/*9119* Copper goblet . .	..
31	" .	90 Agate rod	"
32	" .	91 *15* Copper goblet	$6\frac{1}{2}'' \times 4\frac{3}{4}''$
33	" .	91 *3* Copper tray	..
34	" .	91 *12* Copper cup (shallow)	..
35	" .	a/91 2 Copper spoon, b/91 *4* Copper hook . . .	..
36	" .	91 *9* Copper vase	..
37	" .	91 *7* Copper lid	..
38	" .	91 *5* Copper jug	..
39	" .	137—Stone casket	..
40	Sirkap . . .	View from North-East (Part detail)	$6\frac{1}{2}'' \times 8\frac{1}{2}''$
41	" . . .	View from the West Block D.	..

APPENDIX E—*contd.*

No.	Place and District.	Description.	Size.
	Taxila—Punjab —concld.		
42	Sirkap . . .	211, Copper deg	$6\frac{1}{2}'' \times 8\frac{1}{2}''$
43	,, . . .	762, Copper mirror	,,
44	,, . . .	110, Iron cart	,,
45	,, . . .	588, Copper goblet	,,
46	,, . . .	883, Copper basin	,,
47	,, . . .	219, Iron ghara	,,
48	,, . . .	342, ,, ,, ...	,,
49	,, . . .	230 Stone plaque	,,
50	,, . . .	168, Copper pan.	,,
51	,, . . .	166, Marble vase	,,
52	,, . . .	139, Copper incense burner	,,
53	,, . . .	318, ,, lion (before cleaning)	,,
54	,, . . .	318, ,, ,, (after cleaning)	
55	,, . . .	756, Copper jug	,,
56	,, . . .	763, Stone plaque	,,
57	,, . . .	143, Glass flask	$6\frac{1}{2}'' \times 4\frac{3}{4}''$
58	,, . . .	167, ,, ,, ...	,,
59	,, . . .	220, Stone casket	,,
60	,, . . .	171, Copper cart	,,
61	,, . . .	171, ,, ,, ...	,,
62	,, . . .	a/sk. 18 Copper ring, b/465 Copper ring . . .	,,
63	,, . . .	99 Copper inkpot	,,
64	,, . . .	a/765 Copper inkpot, b/766 Copper vase . . .	,,
65	,, . . .	a/102 Terracotta figure, b. terracotta head . .	,,

APPENDIX E—*contd.*

No.	Place and District.	Description.	Size.
		QUEEN'S COLLEGE IMPRESSIONS.	
66	Benares . .	Asoka : Kalsi No. 1 front	6½"×8½"
67	" . .	" Sanchi Edict	"
68	" . .	" Sahasram	"
69	" . .	" Rupnath Edict . . .	"
70	" . .	" " "	"
71	" . .	1st line	"
72	" . .	"	"
73	" . .	"	"
74	" . .	2nd line	"
75	" . .	"	"
76	" . .	"	"
77	" . .	3rd line	"
78	" . .	"	"
79	" . .	"	"
80	" . .	4th line	"
81	" . .	"	"
82	" . .	"	"
83	" . .	5th line	"
84	" . .	"	"
85	" . .	"	"
86	" . .	6th line	"
87	" . .	"	"
88	" . .	"	"
89	" . .	7th line	"
90	" . .	"	"
91	" . .	"	"

APPENDIX E—*contd.*

No.	Place and District.	Description.	Size.
92	Benares . .	8th line	$6\frac{1}{2}'' \times 8\frac{1}{2}''$
93	" . .	"	"
94	" . .	"	"
95	" . .	9th line	"
96	" . .	"	"
97	" . .	"	"
98	" . .	10th line	"
99	" . .	"	"
100	" . .	"	"
101	" . .	11th line	"
102	" . .	"	"
103	" . .	"	"
104	" . .	12th line	"
105	" . .	"	"
106	" . .	"	"
107	" . .	13th line	"
108	" . .	"	"
109	" . .	"	"
110	" . .	14th line	"
111	" . .	"	"
112	" . .	15th line	"
113	" . .	"	"
114	" . .	"	"
115	" . .	16th line	"
116	" . .	17th line	"
117	" . .	"	"
118	" . .	18th line	"

APPENDIX E—*concld.*

No.	Place and District.	Description.	Size.
119	Benares . .	18th line	6½″ × 8½″
120	" . .	19th line	"
121	" . .	"	"
122	" . .	20th line	"
123	" . .	"	"
124	" . .	21st line	"
125	" . .	"	"
126	Miscellaneous .	XIV century 'Kufic' astrolabe showing *ankabut* or *rete*	"
127	" . .	Tablet of horizons of a XIV century 'Kufic' astrolabe	"
128	" . .	Tablet of a XIV century 'Kufic' astrolabe Latitude 36°	"
129	" . .	Back of a XVII century 'Naskhi' astrolabe . .	"
130	" . .	" XIV century 'Kufic' astrolabe . .	"
131	" . .	Venter of a 'Kufic' astrolabe—XIV century . .	"
132	" . .	" 'Naskhi' astrolabe—XVII century .	"

APPENDIX F.

Report of the Archæological Section, Indian Museum, for the year ending 31st March 1921.

Establishment.—Professor D. R. Bhandarkar, M.A., was in charge of the Archæological Section up to the afternoon of the 10th January 1921, when Monsieur A. Foucher of the University of Paris took over from him and remained in charge till the end of the year.

Maulavi Hafiz Nazir Ahmad was appointed Assistant Curator from the 14th December 1920, on probation, in place of Maulavi A. M. J. Muhammad who reverted to his appointment in the office of the Superintendent of Archæology, Central Circle, Patna.

One Jamadar and a Peon have been added to the staff of menials.

Leave.—Maulavi A. M. J. Muhammad was on leave up to 31st October 1920.

Munshi Wahiduddin Ahmad was on privilege leave for one month from 21st February 1921.

Library.—One hundred and fifty-two books, including various presentations and journals subscribed to were added to the Library.

Photographs.—Five hundred and eighty-three photographs were received during the year from the different circles of the Archæological Survey and the office of the Director General of Archæology in India. The photographs were mounted by Munshi Wahiduddin Ahmad, Marksman.

Galleries.—(1) Mr. Percy Brown returned from leave in the afternoon of 11th December 1920 and resumed his duties as Exhibition Officer in the galleries.

(2) Pandit B. B. Bidyabinod, Assistant Curator, continued to act as official guide. Among the many distinguished visitors received by him and conducted over the galleries were: His Royal Highness the Crown Prince of Roumania and M. Clemenceau, late Premier of France.

(3) The spacious hall of the ground floor of the new wing of the Museum building wherein miscellaneous antiquities are exhibited was thrown open to the public towards the close of the year. Smaller antiquities, both pre-historic and historic, are exhibited in 15 table-cases arranged in two parallel rows. In one of these table-cases, in one panel is exhibited the small image of Prithivī on gold leaf unearthed from an ancient mound at Lauriya and in two other panels are displayed the contents of the stone coffer excavated at Piprahwa by Mr. Caxton Péppe. In the centre of the hall are five upright cases. In two of these cases are exhibited metal images from different parts of India, in one antiquities from Bodh-Gaya, and in two others pre-historic potteries from Tinnevelly. Along the eastern and western walls of the hall are fixed two rows of wall cases in which comparatively larger miscellaneous antiquities are being arranged. Besides antiquities exhibited in the show-cases, in the southern end of the hall are installed in a row the big stone coffer of Piprahwa and casts of the inscribed portions of the Lauriya-Araraj and Lauriya-Nandangad columns of Asoka. In the north-west corner of the hall is exhibited the solitary Egyptian Mummy.

Coin-room and Antiquities—Professor Bhandarkar continued to be in charge of the coin-room and antiquities up to his making over charge to Mon. Foucher. Mon. Foucher's appointment being only a temporary one, Pandit Bidyabinod took over charge of the coins and antiquities from Professor Bhandarkar.

New Acquisitions—(*i*) *Gifts*.—The stucco bust of a female figure together with four specimens of pottery made of red baked clay were donated to the Section by Mr. A. Wheeler of Ranikhet. The provenance of these antiquities is the vicinity of Alexandria, Egypt.

(*ii*) *Coins*.—Altogether 411 new coins were registered—336 silver, 71 copper and 4 lead. Out of these 96 were purchased and the rest received from the following donors :—

Archæological Survey, Western Circle.
Government of Bengal.
Government of the United Provinces.
Deputy Commissioner of Hoshangabad.
Provincial Museum, Lucknow.
Director of Industries, Central Provinces.
Bombay Branch of the Royal Asiatic Society.
Gwalior Durbar.
C. P. Walsh, Esq., Calcutta.

Out of the total number of coins purchased, the coins (96) classified below as (A) non-Muhammadan, belonged to the collection of the late Dr. G. P. Taylor of Ahmedabad and have been purchased from his widow. There are other non-Muhammadan and Muhammadan coins that will be dealt with next year.

Classified list of the coins added during the year :—

Class.	Silver.	Copper.	Lead.
(*A*) *Non-Muhammadan.*			
Kushan	...	5	...
Gupta	4	...	...
Western Kshatrapa	23	...	...
Balabhi	1	...	...

Class.	Silver.	Copper.	Lead.
(A) Non-Muhammadan—contd.			
Traikūṭaka	...	1	...
Andhra coinage (unassigned)	...	...	4
Ujjain coinage	...	14	...
Sassanian of Persia	5	...	...
Rajputana and Gujrat coinage	...	1	...
Kashmir coinage	...	3	...
South Indian Kāsu	...	3	...
Unassigned Modern	...	8	...
Native State	4	20	...
(B) Muhammadan.			
Adil Shahi dynasty	...	9	...
Moghul	279	4	...
Oudh	6	...	...
Bhopal	1	...	...
Durrani	4	...	...
Gujrat	9	...	...
Egypt	...	1	...
Bahmani	...	1	...
Malwa	...	1	...
TOTAL .	336	71	4

Miscellaneous—1. In consultation with the Board of Trustees, Indian Museum, a few duplicate sculptures stored in the godown were given away as loans to the Sardar Museum and Sumair Public Library, Jodhpur.

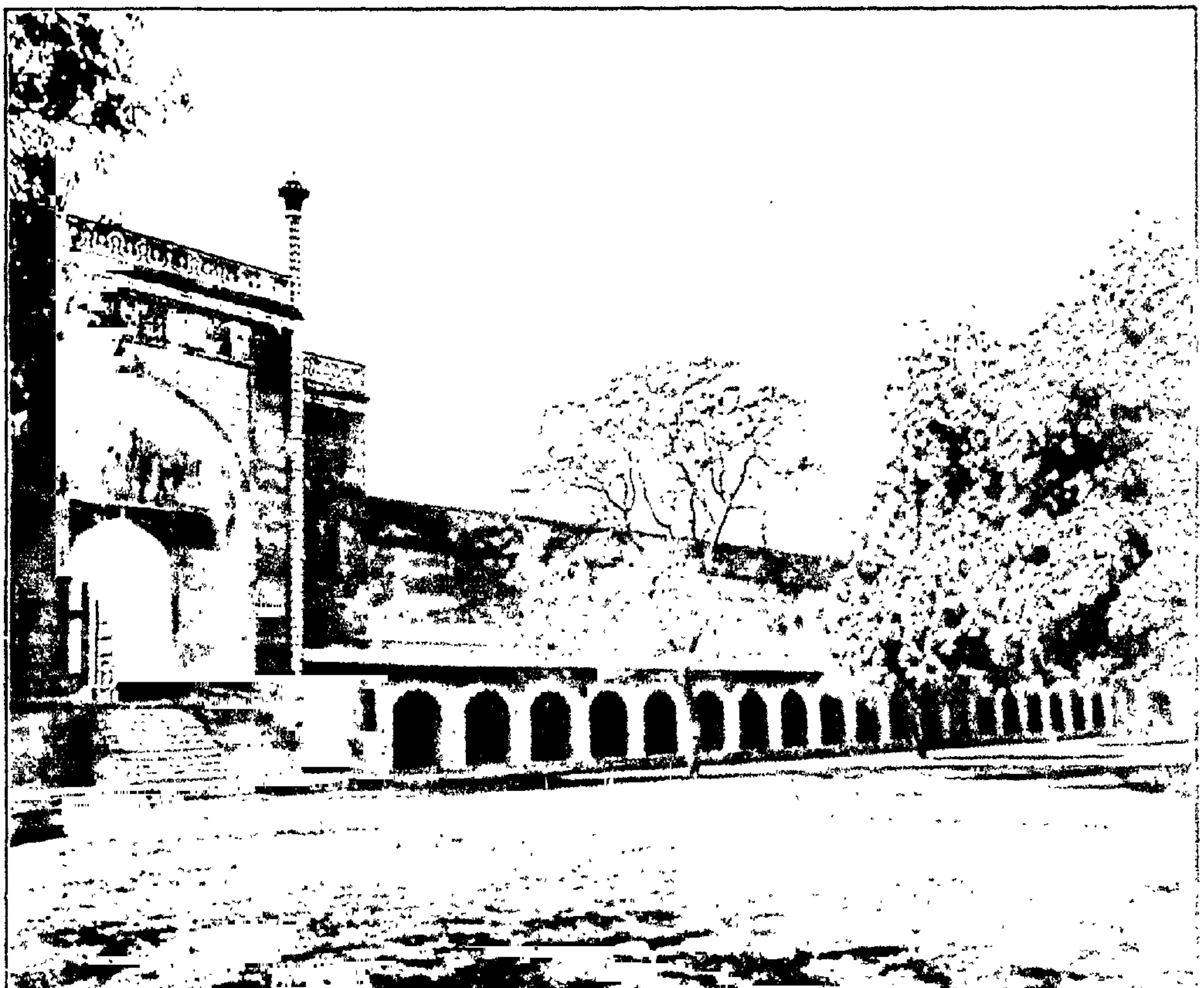
2. Professors and students of the Calcutta University were given facilities for studying coins in the coin room, the Assistant Curator, Pandit B. B. Bidyabinod, acting as demonstrator for those studying non-Muhammadan coins, and the other Assistant Curator, Maulavi Hafiz Nazir Ahmad, for those interested in Moslem coins.

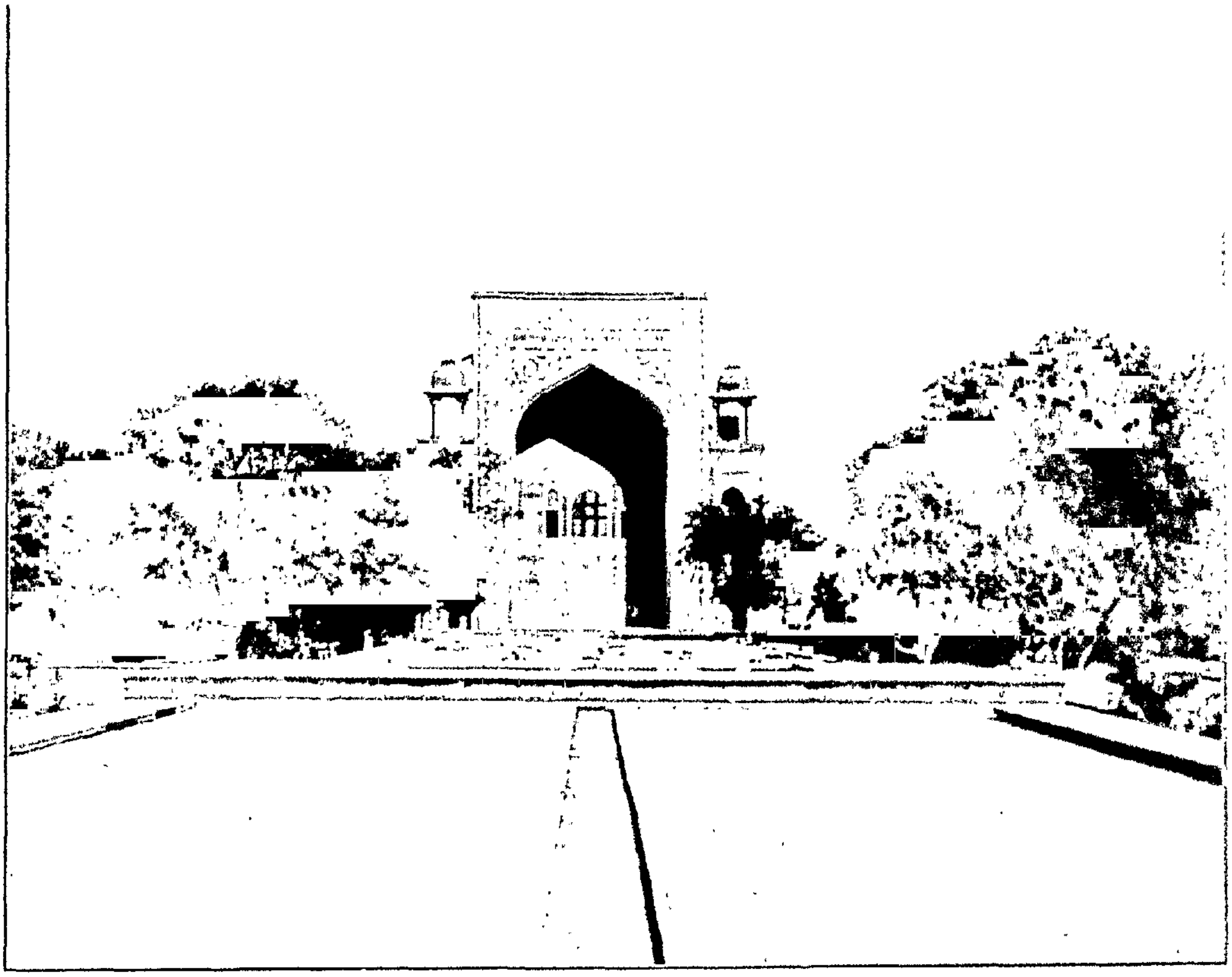
3. Under the instruction of the Officer-in-Charge and with the consent of the Board of Trustees, 527 Durrani coins were sent to the British Museum, London, in two batches, to be catalogued there by Mr. Whitehead of the Punjab Civil Service.

CALCUTTA
SUPERINTENDENT GOVERNMENT PRINTING, INDIA
8, HASTINGS STREET

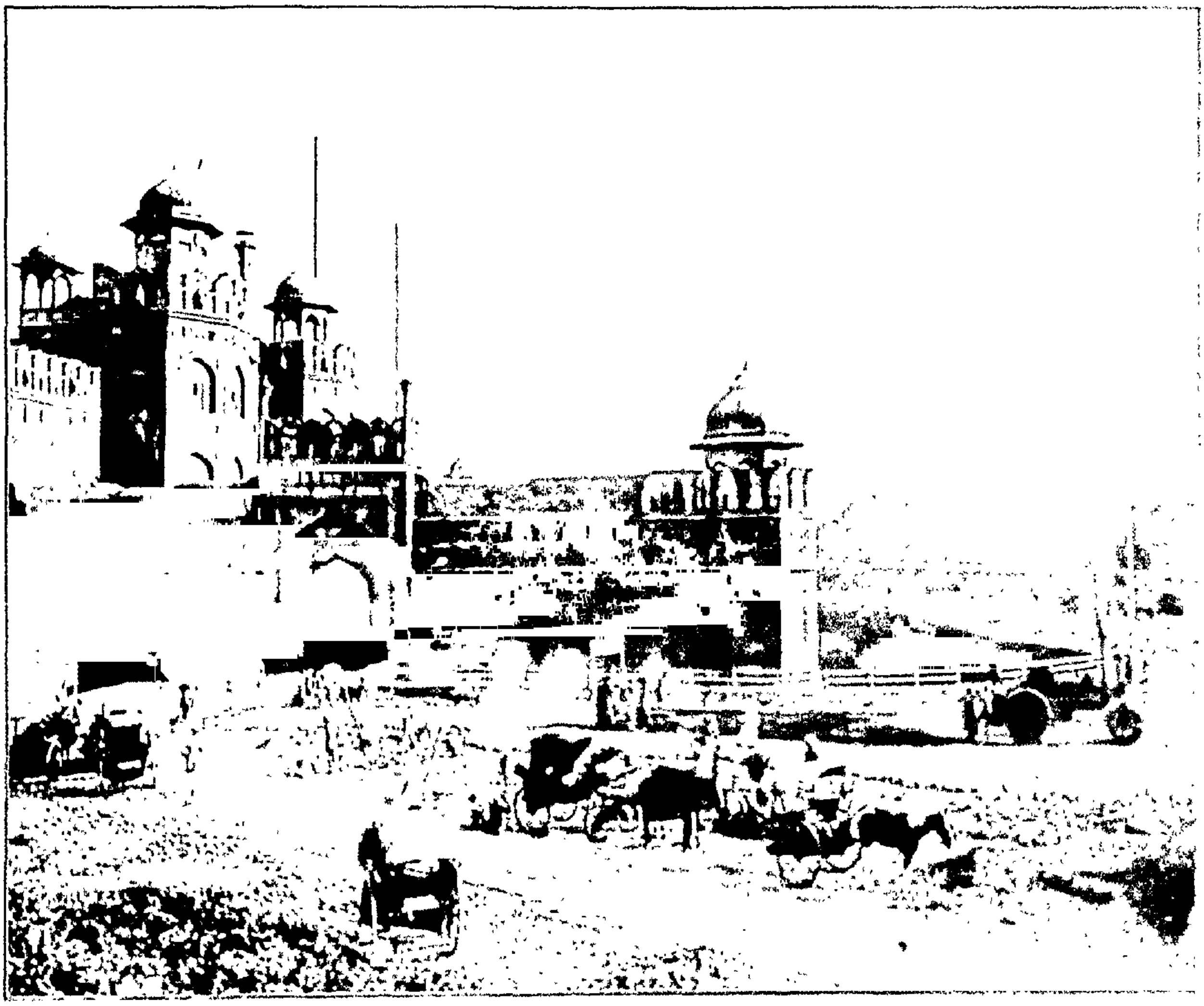


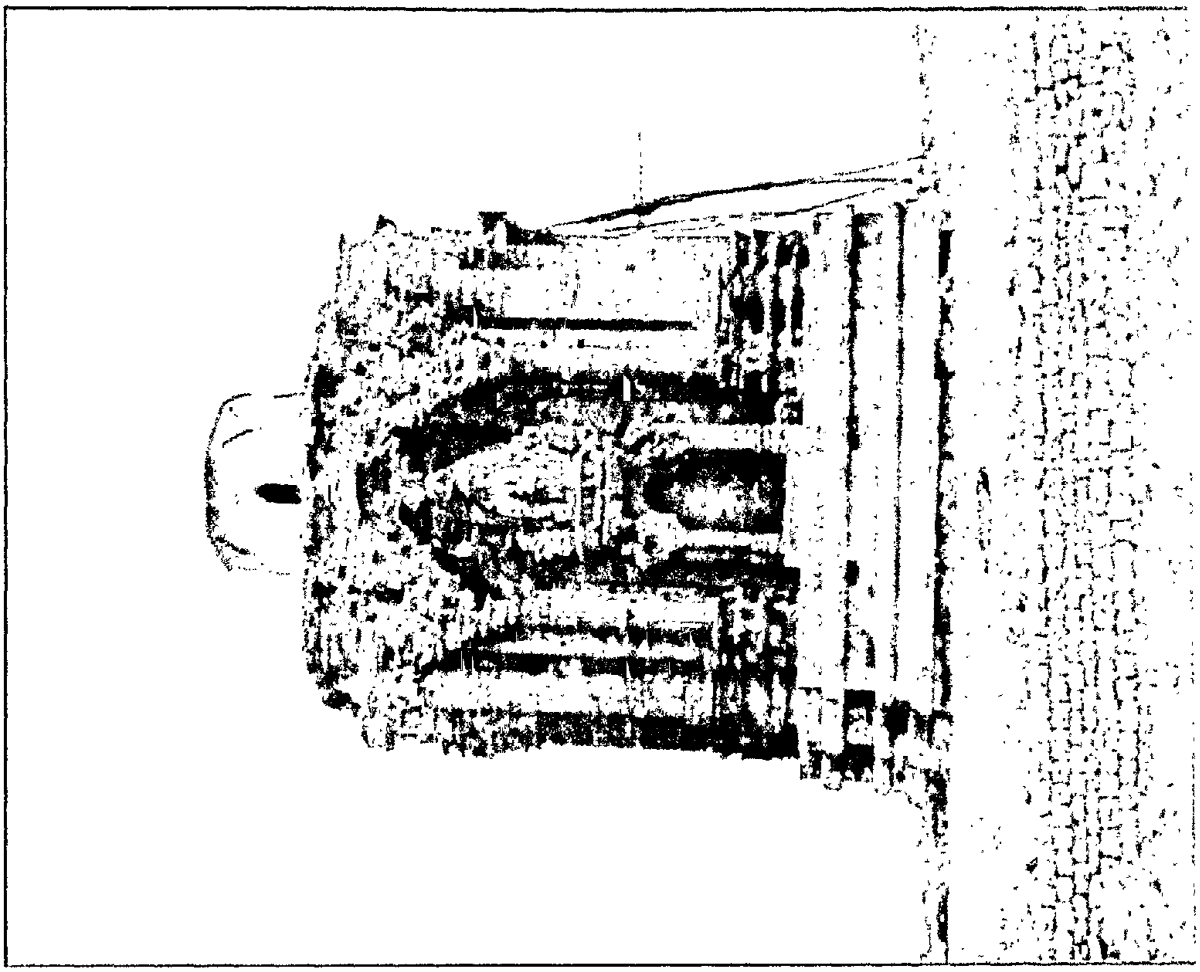
(a) COURTYARD OF TAJ MAHAL: SOUTH WALL LOOKING TOWARDS SOUTH-WEST, BEFORE CONSERVATION.





(a) Sikandara Agra: View of East Causeway showing Tank and Channel under reconstruction

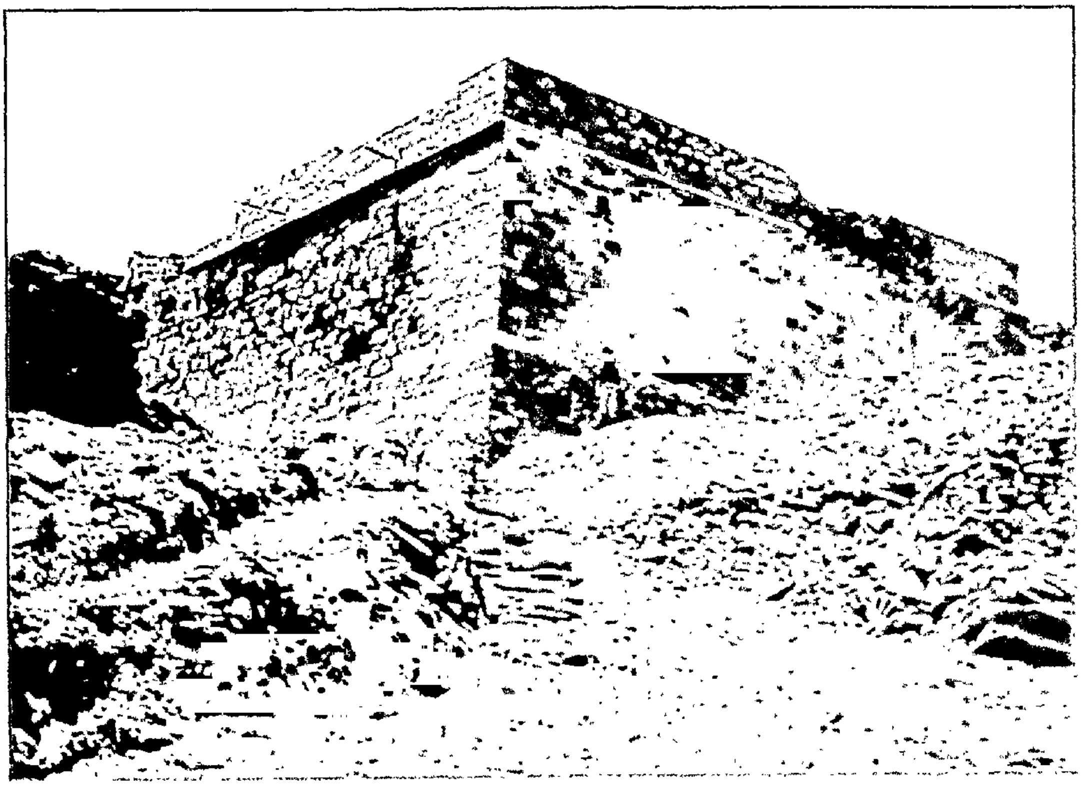




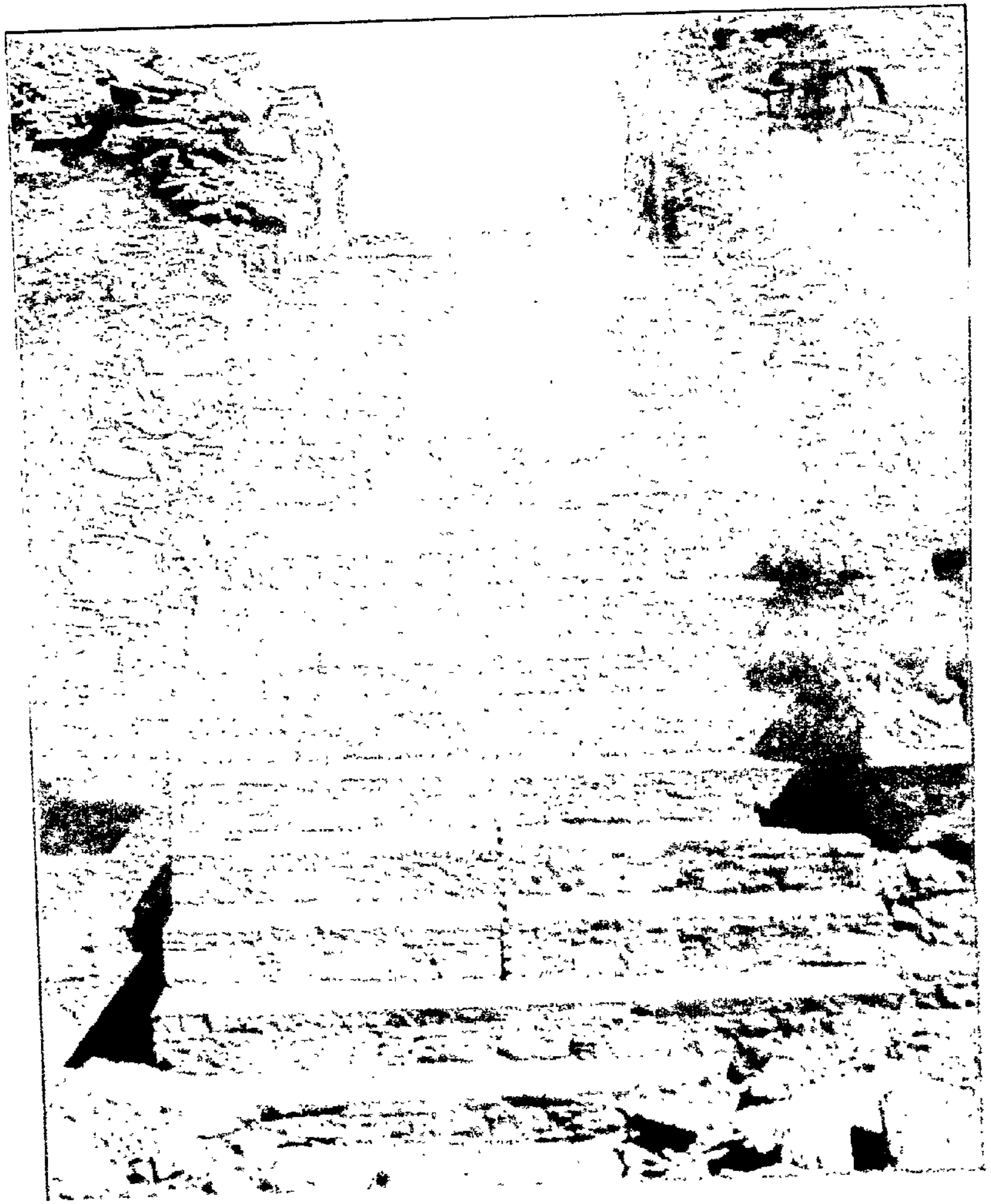


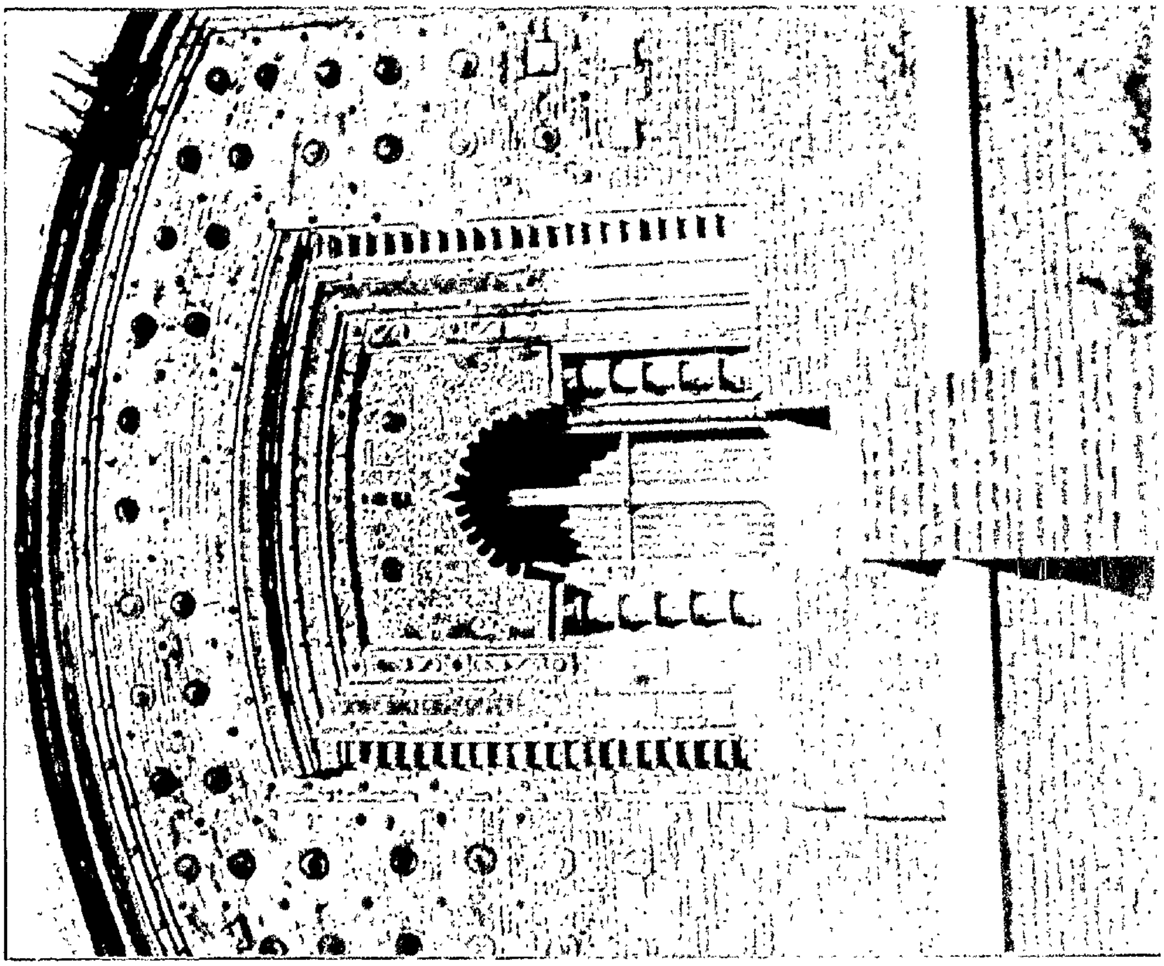


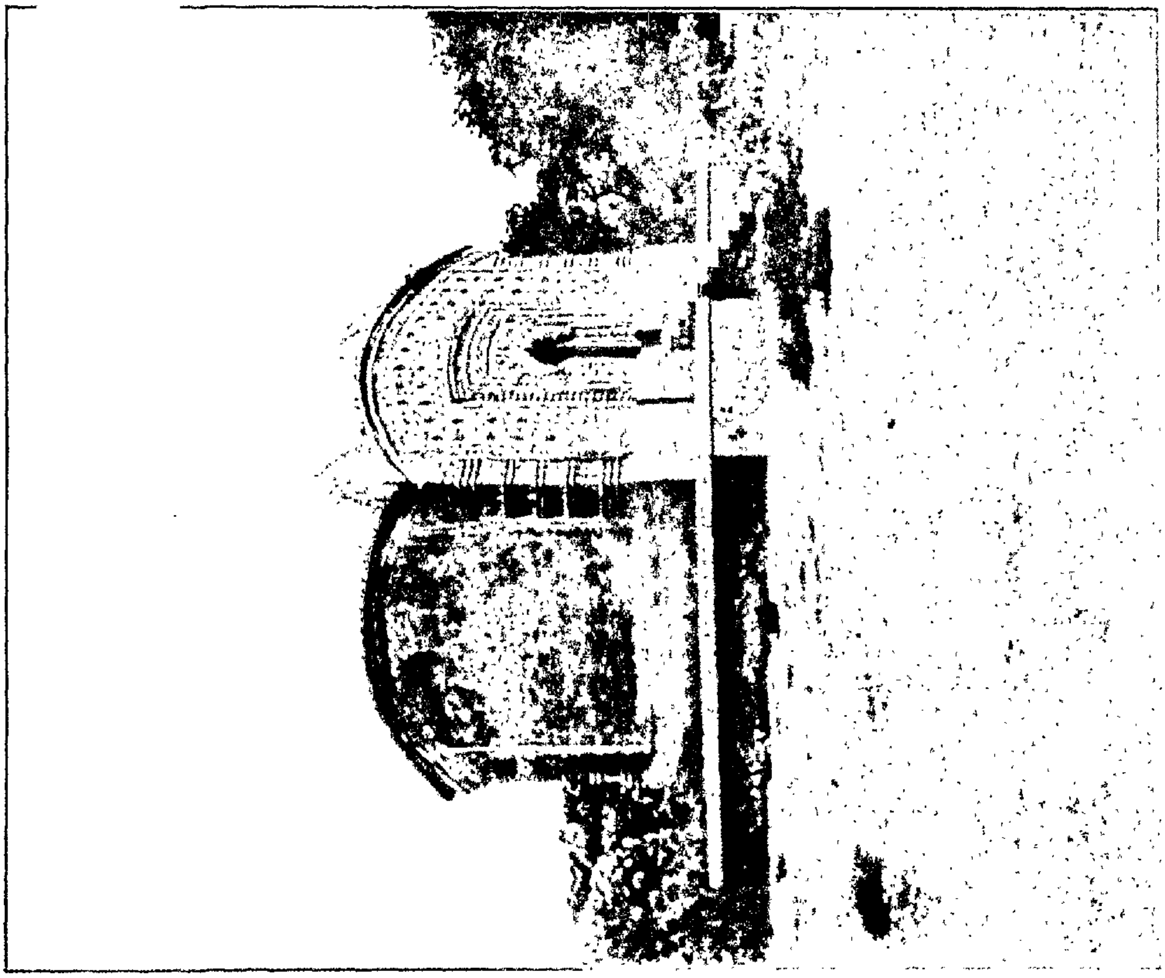
(a) Jamalgarhi: Revetment of Conference Hall, before conservation.

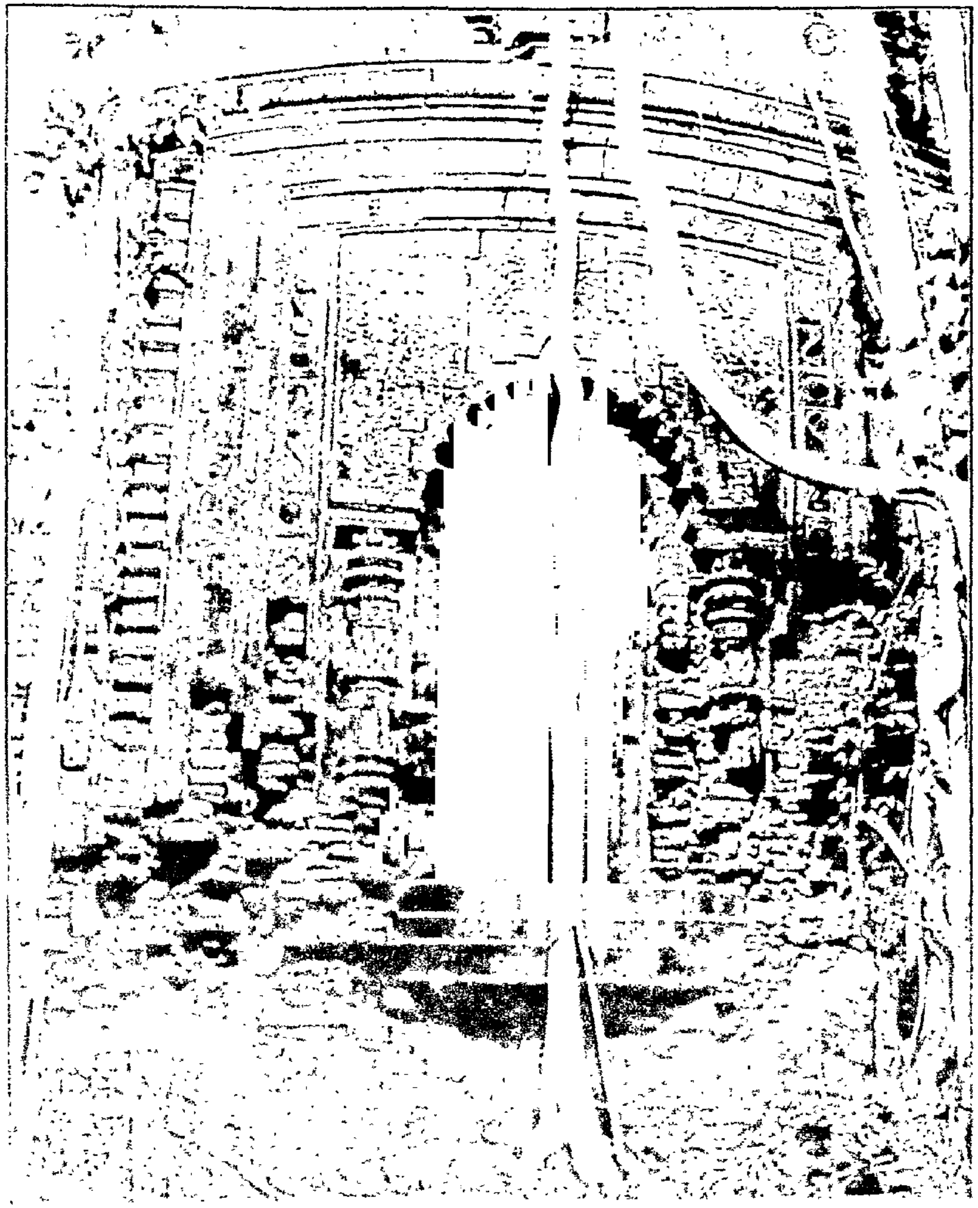




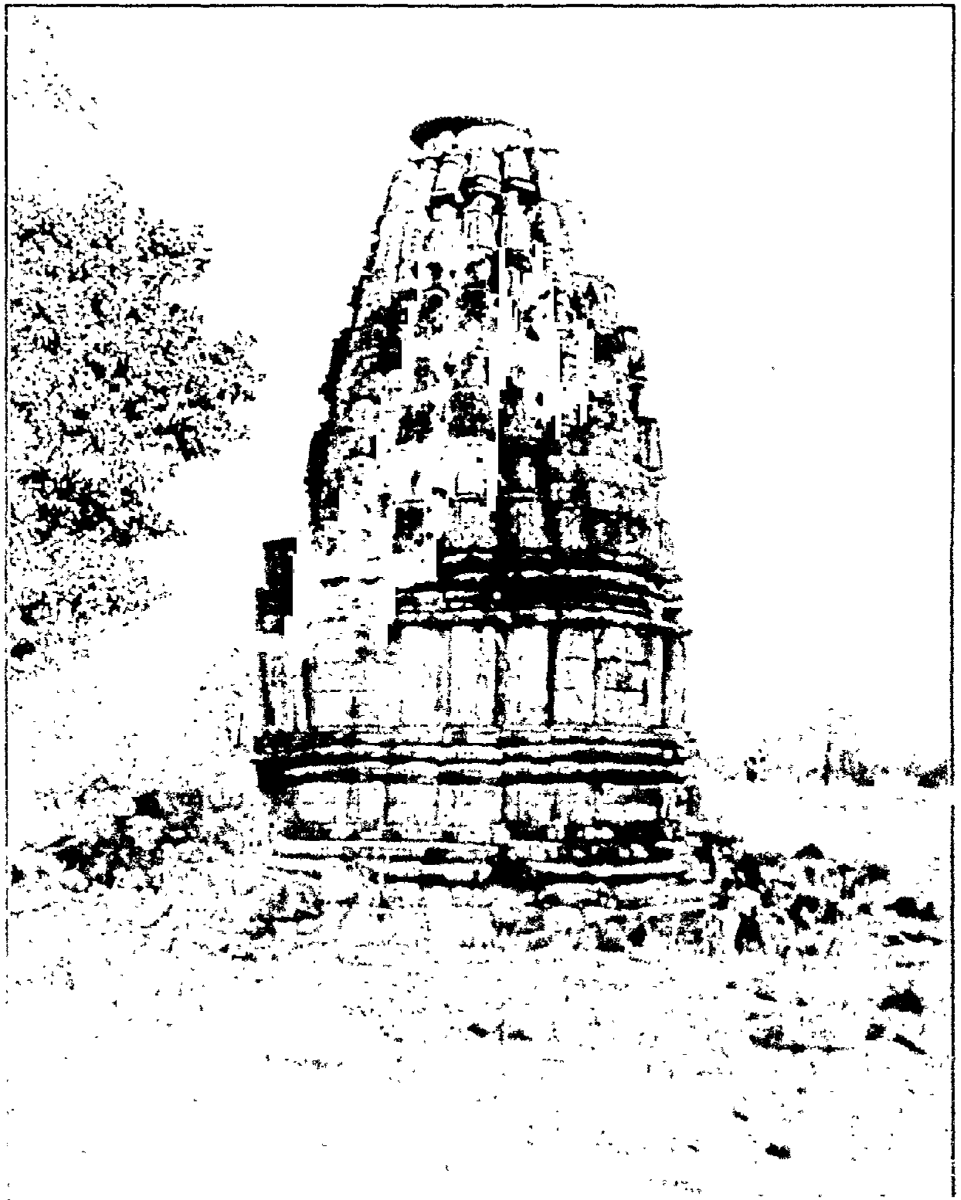




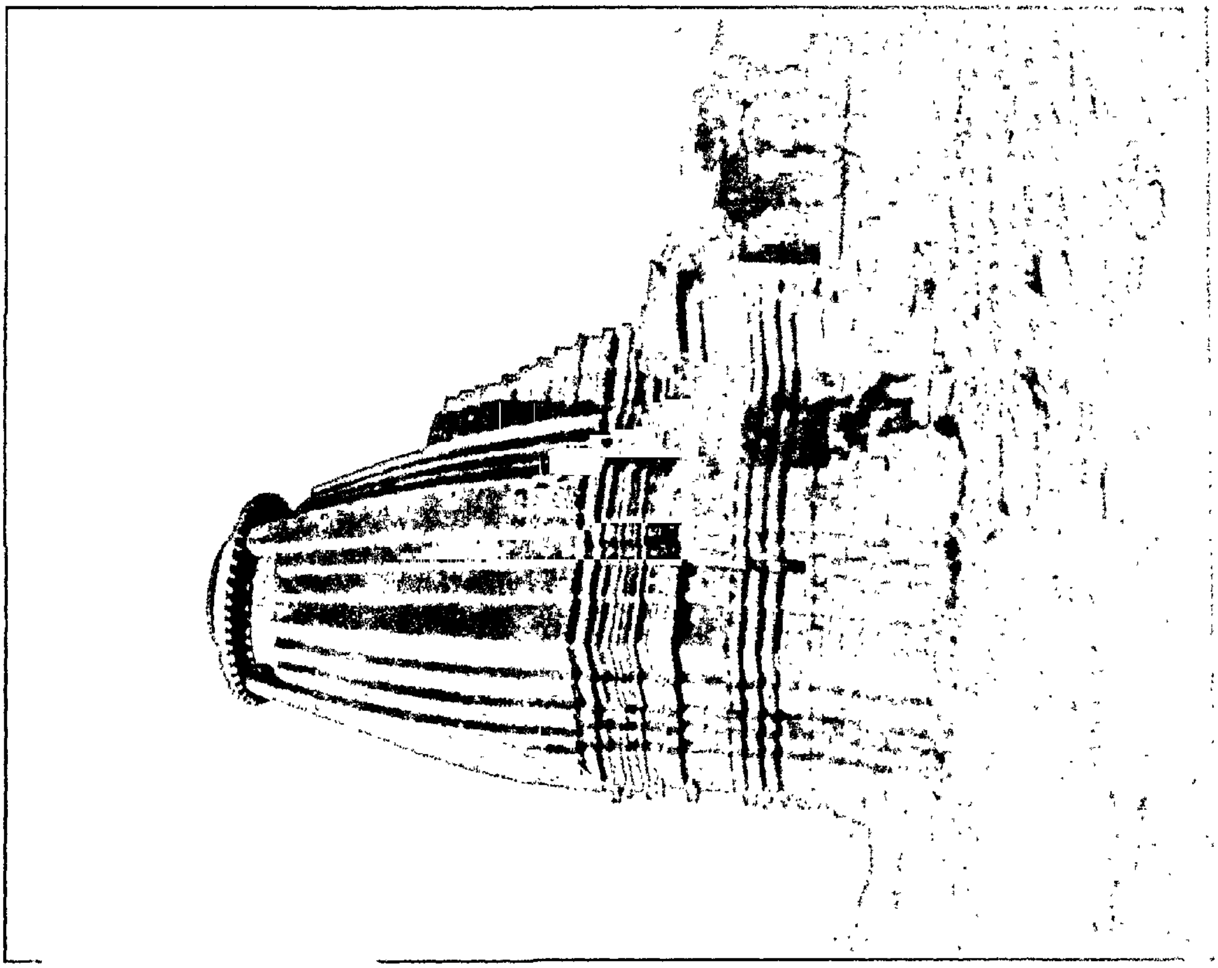


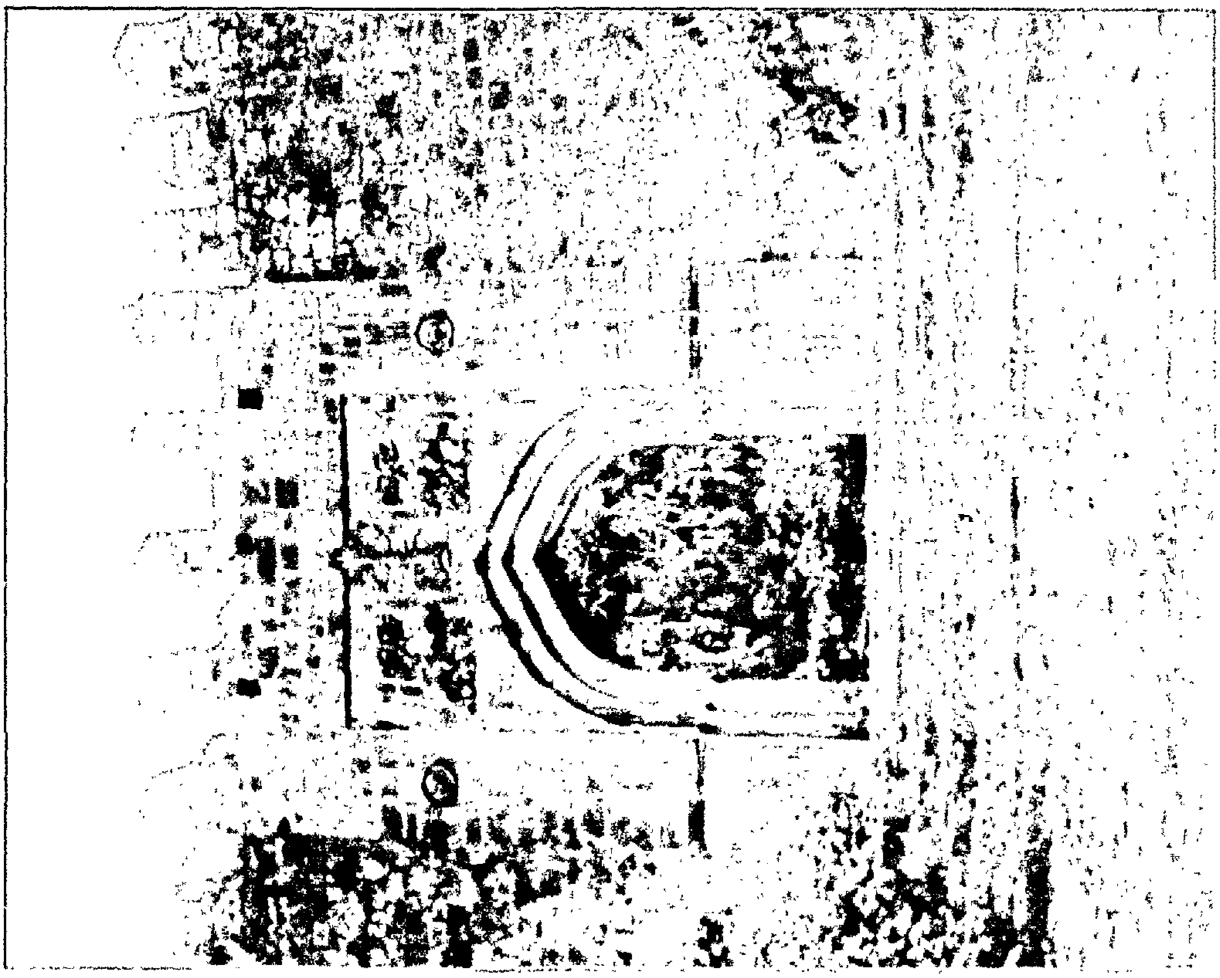


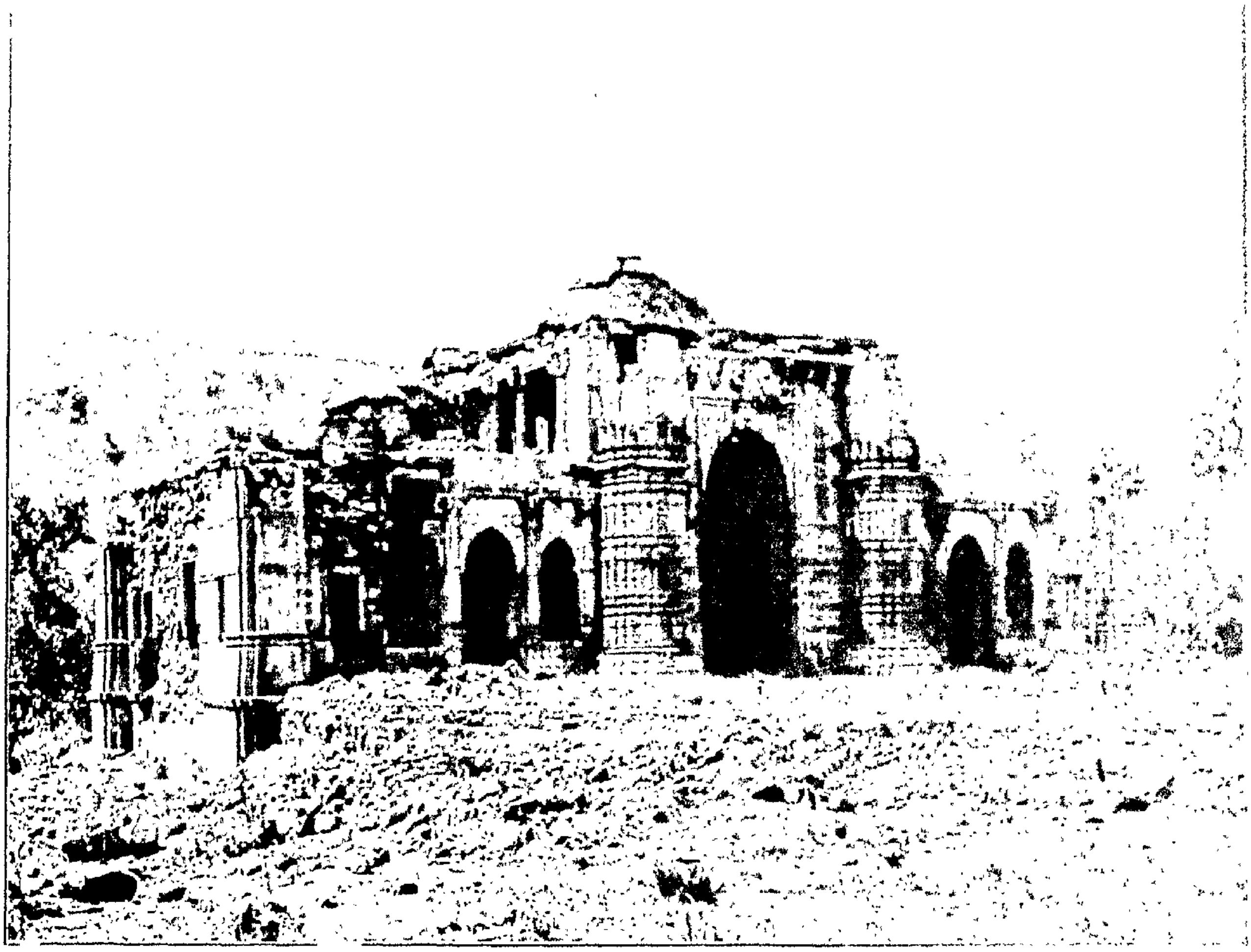
[illegible]



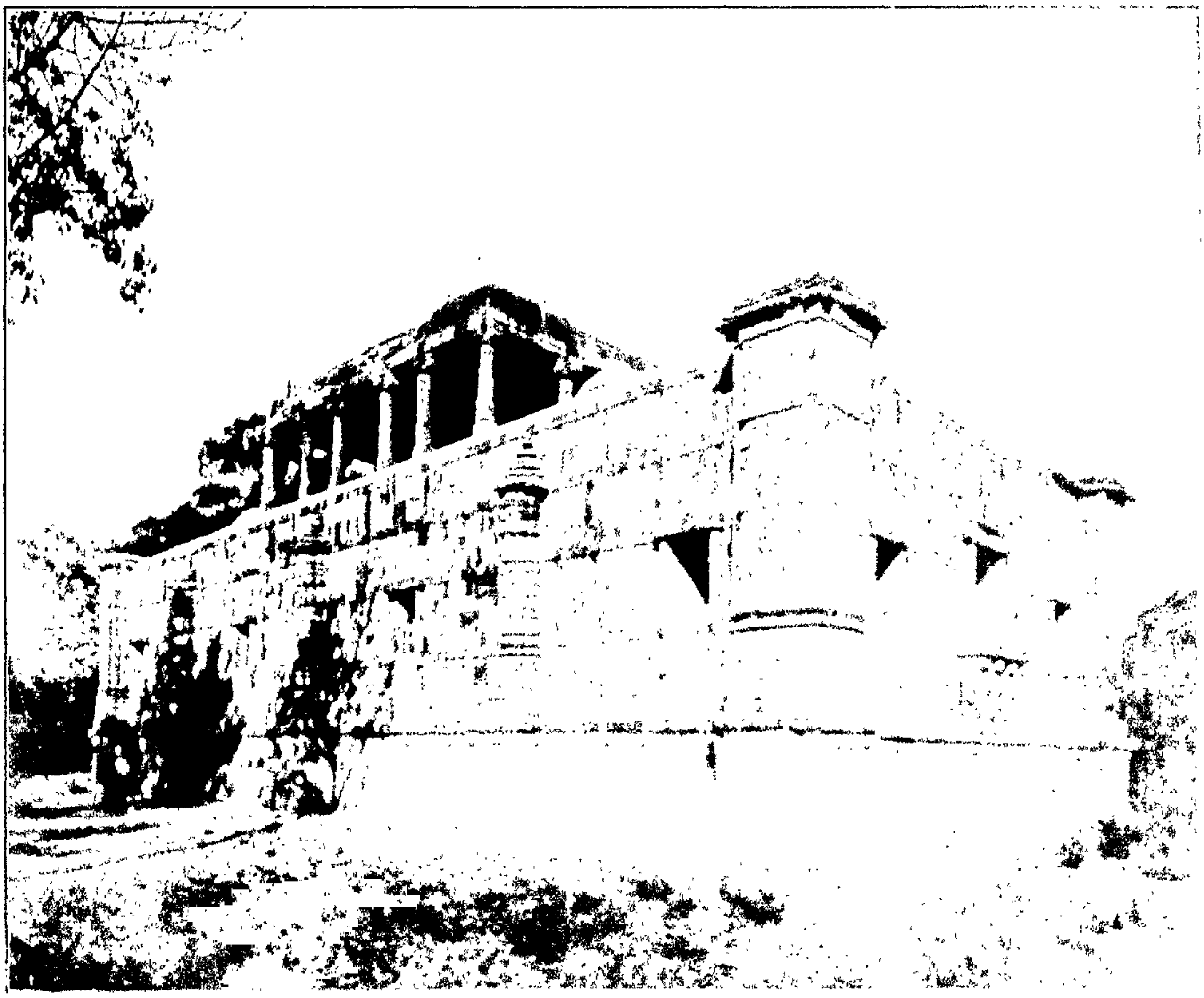
[illegible]







(a) NAGINA MASJID, CHAMPANER: BEFORE REPAIR (FRONT).





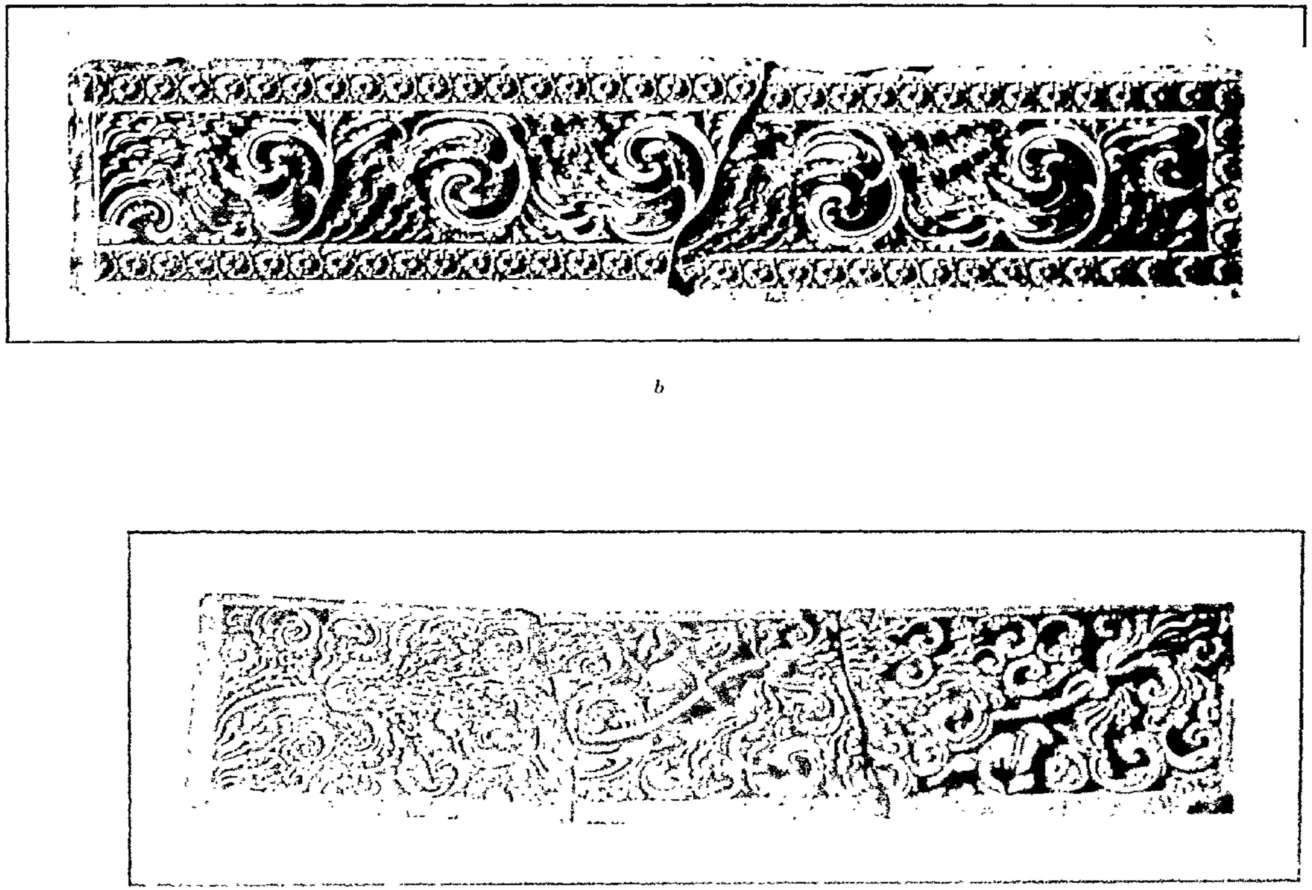
(a) EXECUTION TREE, BIJAPUR.



(b) TEMPLE AT [illegible]



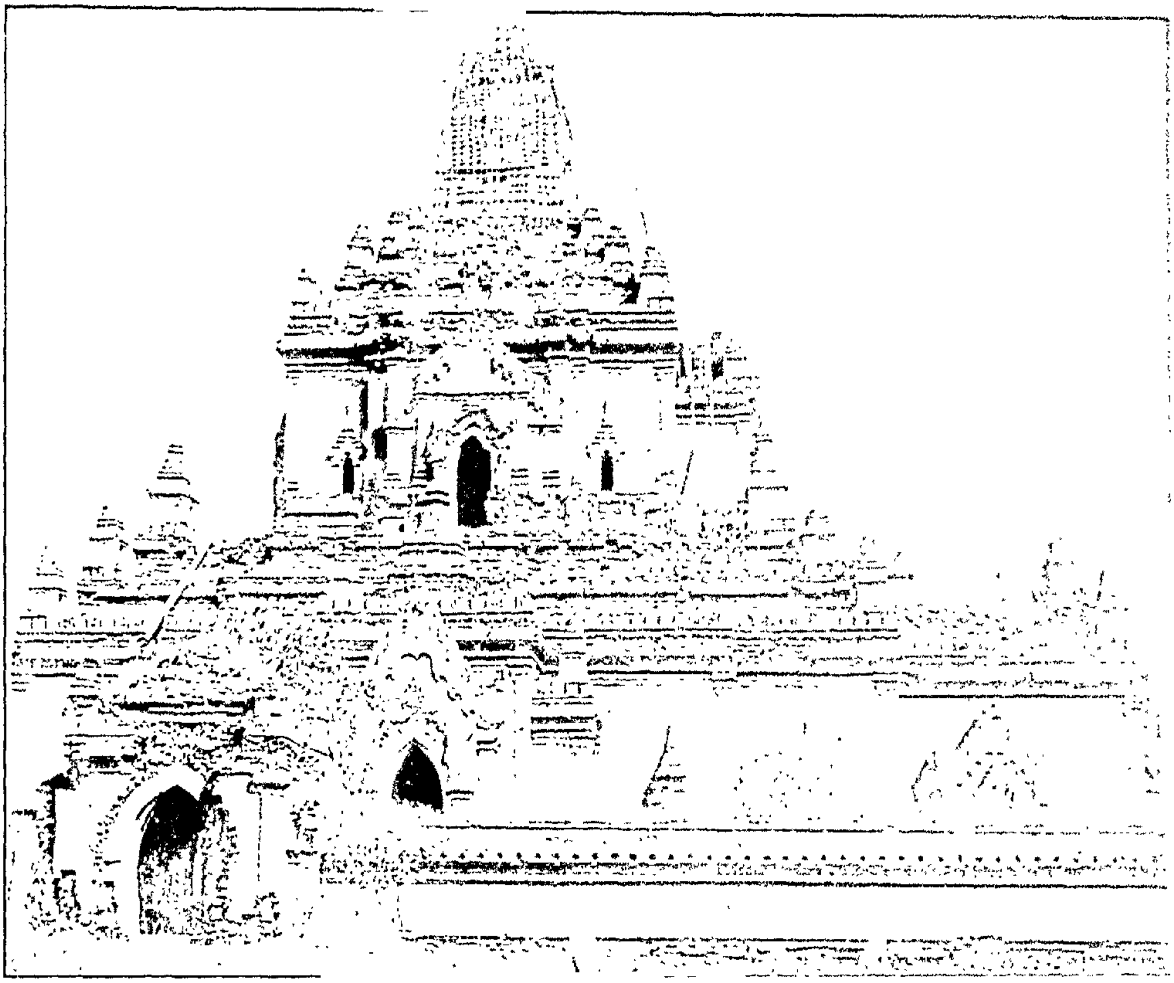
[illegible] Image of Ganesha from Bhumara.



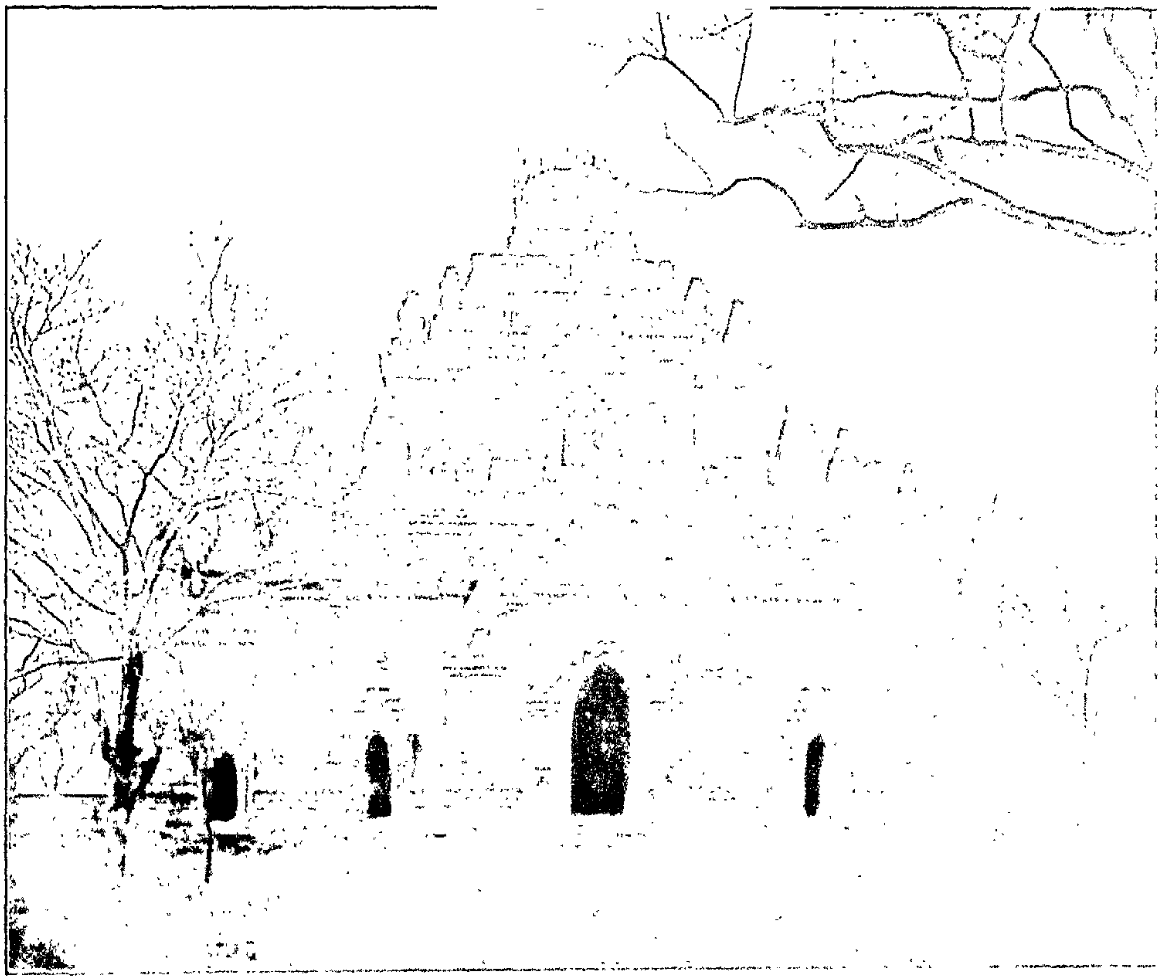
b

a

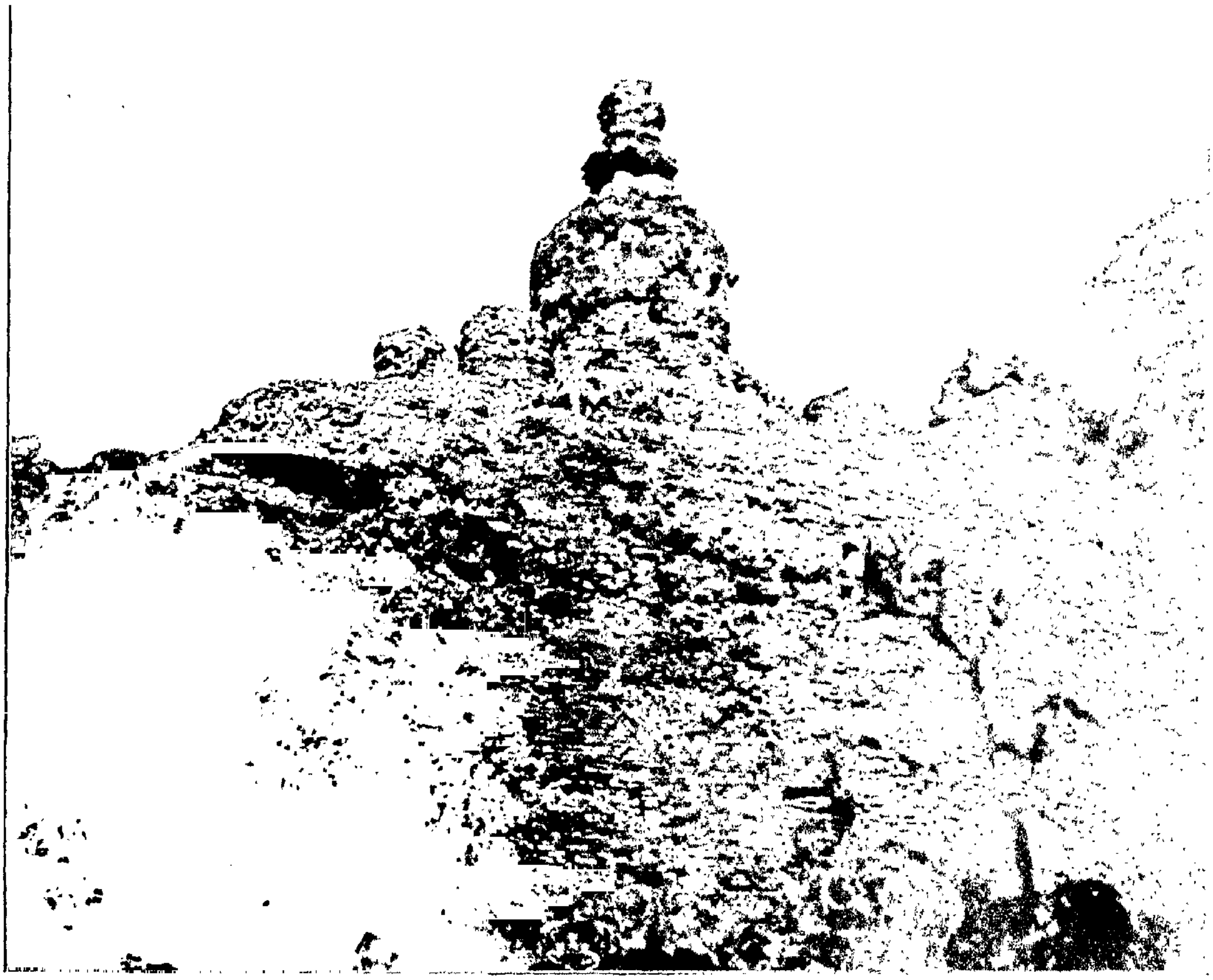
[illegible] Lintels of Mandapa of Bhumara Temple



(a) Tilominlo Temple, Pagan.



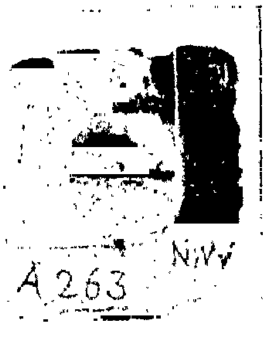
(b) Sulamani Temple, Pagan.



(a) Shitthaung Temple, Mrohaung.



b (rev.)



c (rev.)



d (rev.)



e



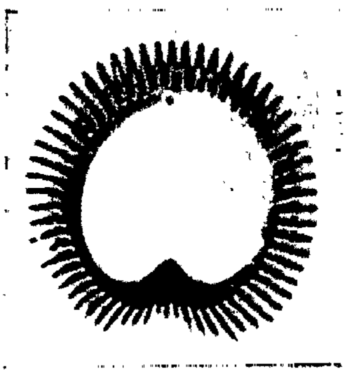
b. (obv.)



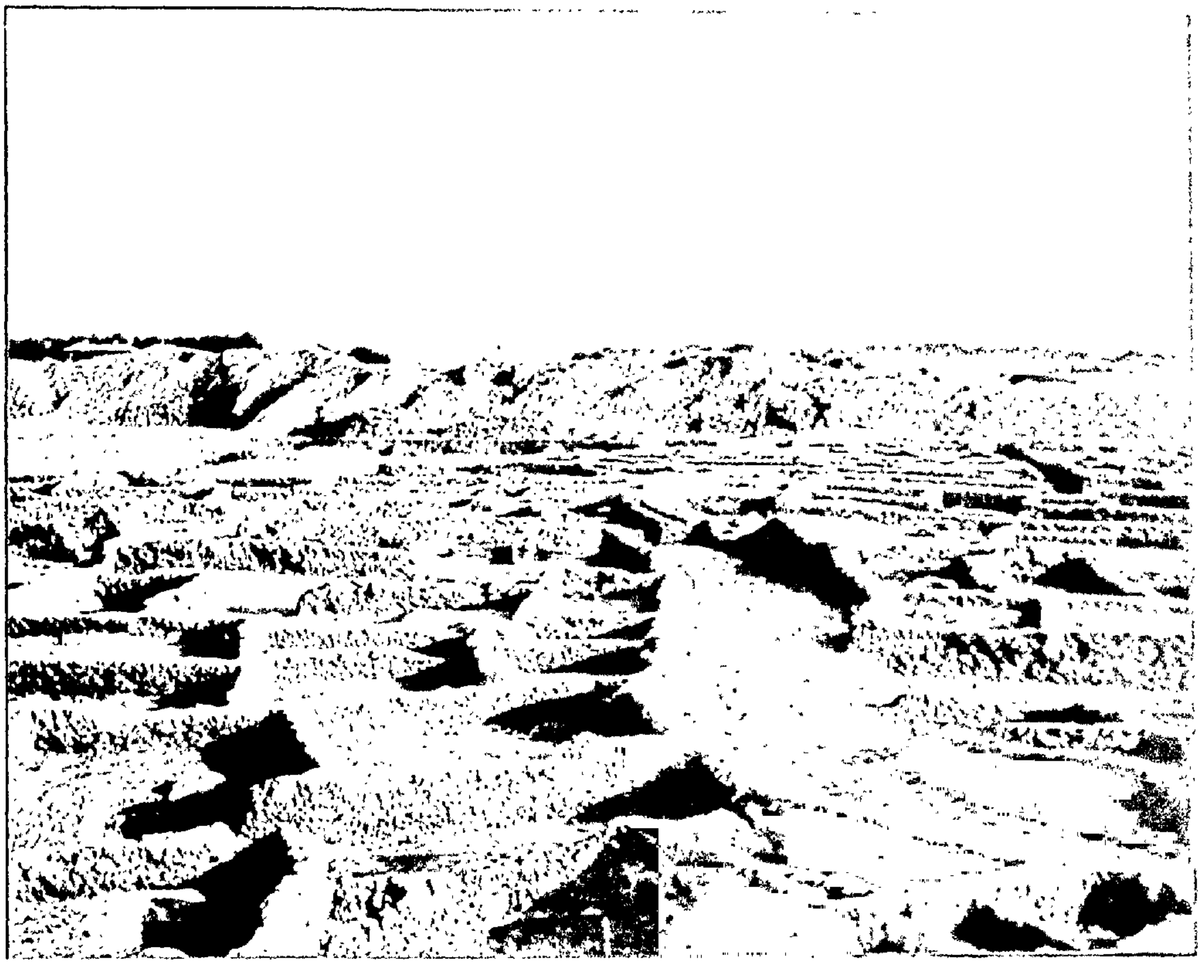
c (obv.)



d (obv.)



e.



(a) Taxila Excavations: Remains on Bhir Mound from South East.



(b) Taxila Excavations: Hall with pilasters from South East.



1. Ht. 4½".



Ht. 5½".



3. Ht. [illegible]. 4. Ht. 4. [illegible]



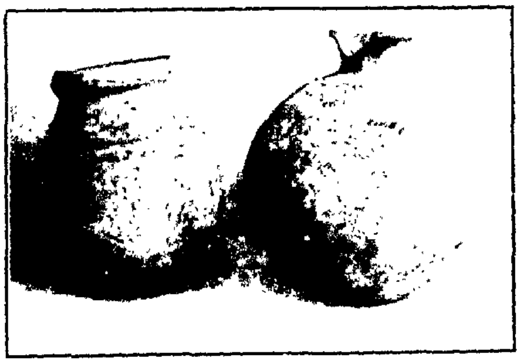
6. Ht. 8".



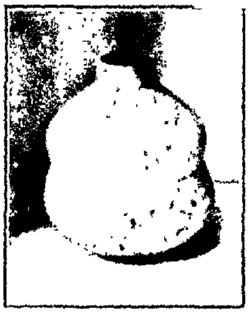
7. Ht. 5".



8. Ht. [illegible]



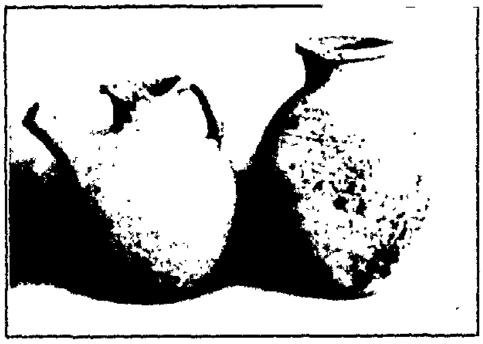
9. Ht. 7½". 10. Ht. 8½".



11. Ht. 8".



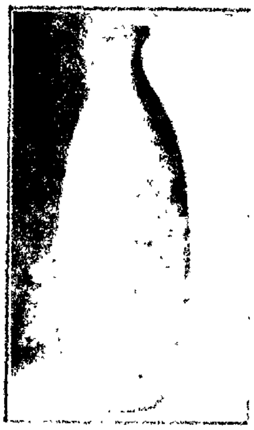
12. Ht. 7



13. Ht. 7½". 14. Ht. 8½".



15. Ht. 11".



16. Ht. [illegible]



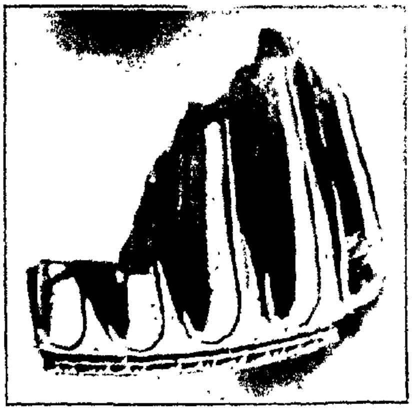
17. Ht. 10½".



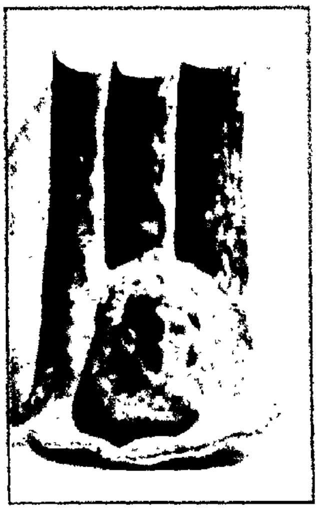
18. Ht. 18".



19. Ht. [illegible]



1. Ht. 7".



2. Ht. 5½".



3. Ht. [illegible]



4. Ht. 5¾".



5. Ht. 3[illegible]".



6. Ht. 3[illegible]".



7. Ht. [illegible]



8. Ht. 4¾".



9. Ht. 3¼".



10. Ht. [illegible]".



11. Ht. 6"



12. Ht. [illegible]



13. Ht. 4".



14. Ht. 4[illegible]".



15. Ht. 4[illegible]".



16. Ht. [illegible]



17. Ht. [illegible]

Taxila Excavations, [illegible]


1.


2.


3.


4.


5.


6.


7.


8.


9.


10.


11.


12.


13.


14.


15.


16.


17.


18.

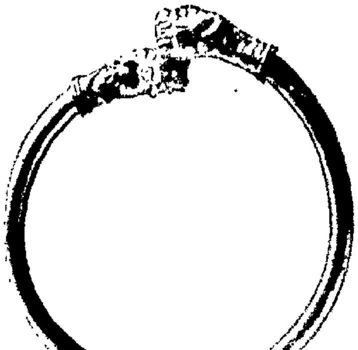

19.


20.

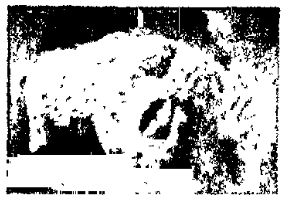

21.


22.


23.


27. Diam. 4″

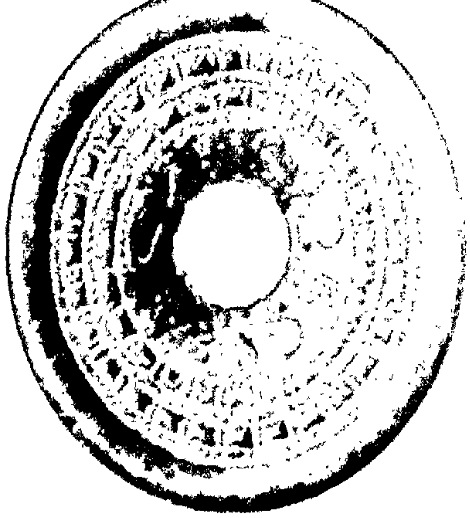

24.


25.


26.


28.


29. Orig. Diam. 4″


30.



(a) Muttra: Kushan image now worshipped as Gokarnesvara Mahadeva.



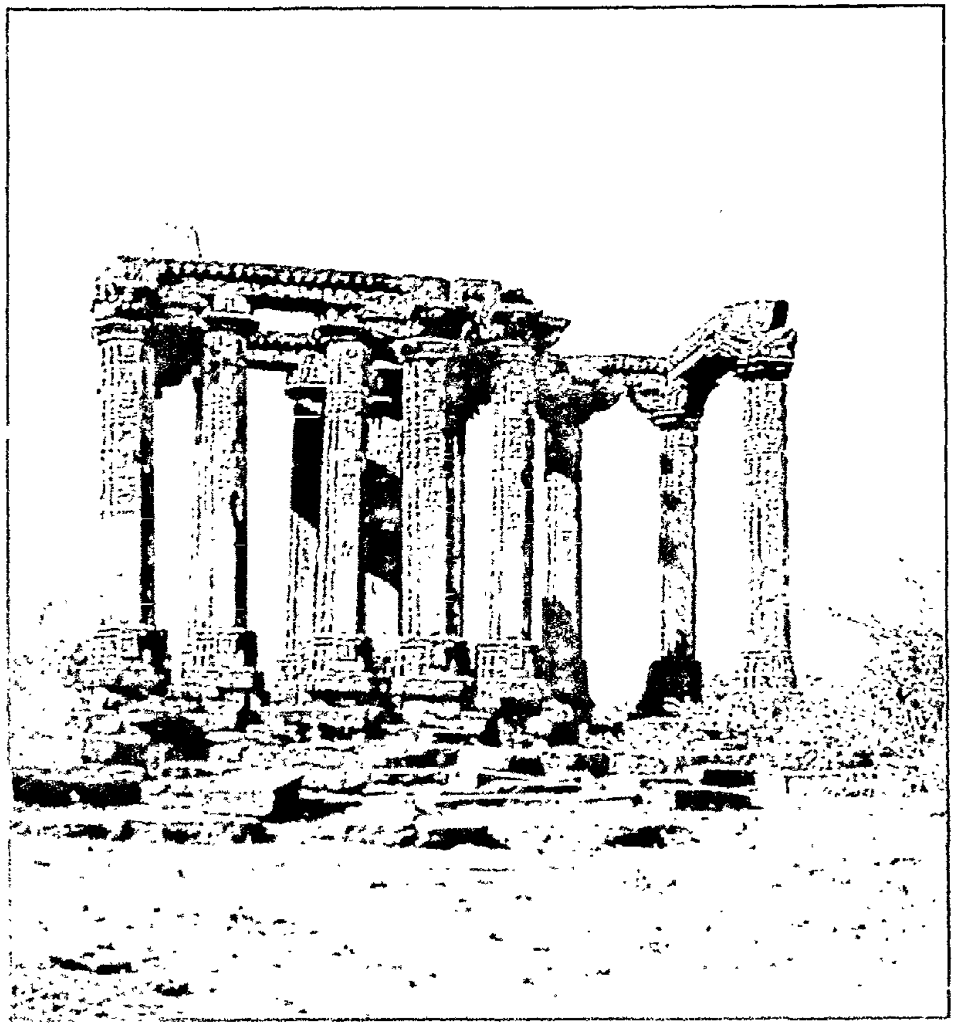
(b) Gopalpur near Muttra: Maurya image now worshipped as Manasadevi.



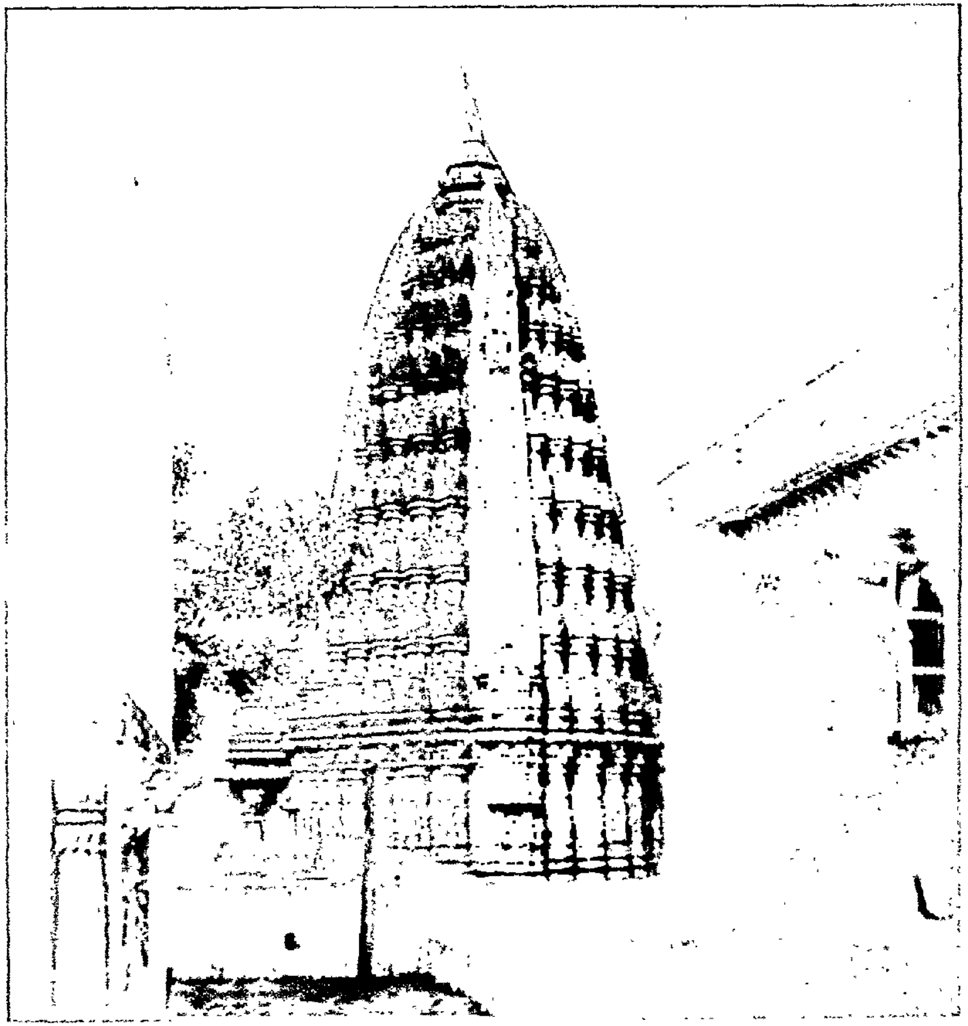
(c) Nalanda: Bronze statue of the Buddha.



(d) Nalanda: [illegible]



[illegible] [illegible] temple at Bihar, Narsinghgarh State.



[illegible] Temple of Siddhnath, Nemawar, Indore State.